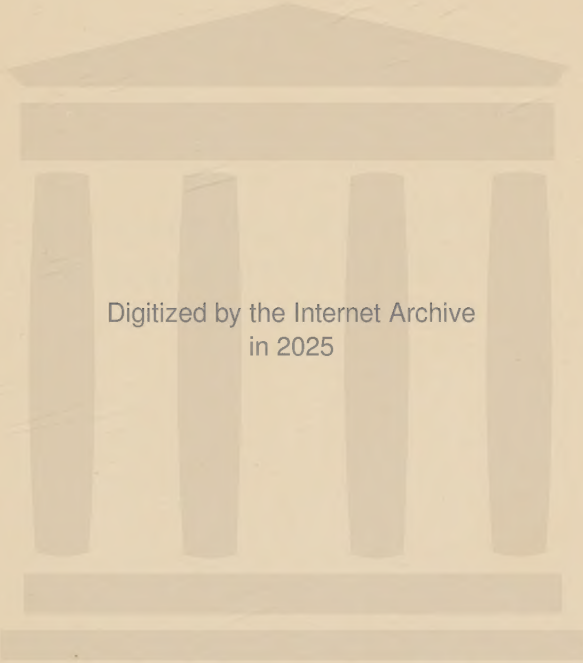


INDUSTRIAL HISTORY OF THE UNITED STATES

WELLS





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INDUSTRIAL HISTORY
OF THE UNITED STATES



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INDUSTRIAL HISTORY OF THE UNITED STATES

BY

LOUIS RAY WELLS

MECHANIC ARTS HIGH SCHOOL, BOSTON

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PREFACE

The industrial development of the United States has followed lines similar to those of European nations, — advancing slowly up to the end of the eighteenth century and after that gathering greater speed and momentum. Here, as in Europe, the growth has been accompanied by the use of machinery, by specialization, division of labor, concentration, growing complexity of organization, and, finally, by an increasing degree of public control.

This text follows a topical rather than a chronological method of treatment. Nevertheless, allowing for an inevitable overlapping of events, it seems possible to distinguish four major periods of development, roughly divided as follows: (1) the colonial period of simple domestic economy and of dependence upon foreign trade, extending from the beginnings of permanent settlements to 1763; (2) the period of transition from colonial to national economic life, 1763 to about 1825; (3) the period of national consolidation and isolation, 1825 to 1860; and (4) a period of readjustment, marked by combination and organization growing out of severe competition, by public regulation of industry, and by all the new problems resulting from the closing of the frontier.

The text emphasizes three principal ideas, foremost among which is the effect upon a people of centuries of a constantly moving frontier. It is difficult to estimate the influence of the fact that since the beginnings of American history every day has been "moving day" for large numbers of the people. They went into the West, crude, untamed, unshackled by tradition, out of touch with the old home culture, and often out of the reach of regularly established law. From such conditions the people developed self-reliance, adaptability, a disposition recep-

tive to new ideas, a rough and ready democracy, and also, on account of their isolation, an extreme provincialism.

Closely connected with the expansion of the people was the promise of the natural resources. Perhaps no greater influence has been brought to bear upon American life than the fact that for so long a time the people had the comfortable feeling that they had something to fall back upon. What need had they of thrift, endowed as they were with "inexhaustible" stores of natural wealth? If the young man was not satisfied, he could "go West" and appropriate his share of the national heritage. How much effect this royal road to wealth had upon such matters, for example, as the labor market and the American standard of living, one cannot say; but its influence must have been very great.

Although popular expansion and the natural resources were thus shaping American life and character, it was only as expansion ceased and the resources were appropriated, that a high plane of economic organization could be developed. A third point of emphasis, therefore, has been upon the effects of bringing people together. Even toward the end of colonial days these effects could be seen in a more complex organization along the coast. In later days the deadening influence of a widely scattered population was rapidly removed by improved means of transportation and communication. The bringing of the people into contact with one another was the foundation of national unity. The domestic market took the place of the foreign market, and upon the development of the former most of the great economic transformation of the nineteenth century rested. From an economic point of view, the grand result of all the main forces which have combined to make industrial America has been the building up of a colossal market, and of this development history must take due account.

An attempt has been made to avoid loading the text with statistical details. Emphasis has been put upon the *way* in which things have been done rather than upon the *amount* done. It is a qualitative rather than a quantitative analysis. While a

recital of the facts must form a part of an historical text, yet more important are the whys and the wherefores of the facts. The aim, therefore, has been not only to show what the facts are, but to show, as far as may be, why the facts came to be.

It has been deemed best not to deal as a whole with the effects of the Great War, because it will be some time before these effects are stabilized enough to be appraised satisfactorily. Exceptions have been made in the case of certain movements which were well on their way before the war began and which made definite advances while the struggle was in progress. Statistics, too, as far as seemed necessary, have been brought down to date.

My thanks are due to a great many people connected with industrial concerns, commercial associations, libraries, and historical societies for material and suggestions courteously given. It is impossible to mention all by name, but especially am I indebted to Mr. Frank H. Chase and Mr. Horace L. Wheeler, of the Boston Public Library, and to Miss Elizabeth Walsh, of the Cambridge Public Library, for their unfailing courtesy and assistance; and to Mrs. Charles Moss, of Los Angeles, for valued aid in the collection of illustrative material. I wish to thank, also, Professor Roy Davis, of Boston University, for helpful suggestions; Mr. Charles Lane Hanson, Head of the English Department in the Mechanic Arts High School, and Professor Benjamin B. Kendrick, of Columbia University, for criticizing the entire manuscript; Mr. Winthrop Tirrell, Head of the Department of Economics in the High School of Commerce, for reading the proof; and Professor F. A. Golder, of Leland Stanford University, for criticisms and suggestions that have been a never-ending source of encouragement. Most of all, I thank my wife, whose zealous labors have greatly reduced my task and whose sympathy and encouragement have never failed me.

Cambridge, Mass.

L. R. W.

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PART I. THE COLONIAL PERIOD

CHAPTER I

THE EUROPEAN BACKGROUND OF EMIGRATION

Introduction — The real discovery of America

Religious and political disturbances

 The wars of religion in Europe

 The Reformation in England

 Puritan dissent from authority

Economic condition of the people

 Prices

 Wages

 Landholding

 Unemployment

Early explorations

 Origins

 The Portuguese and the Spanish

English exploration

 England's economic dependence upon the foreigner

 Purposes of English exploration

 Colonization as a business enterprise

Introduction. — It was not until the seventeenth century that the people of Europe really discovered that part of America which we know as the United States and Canada. For over a hundred years they had had a vague knowledge of its existence, but they had not generally thought of it as a place of escape from poverty, a haven from oppression, and a hope for

individual freedom in the future. But in this period religious persecution and political oppression caused many men and women of Europe to give up their old homes and seek others in the newly discovered land. Numbers came because they were naturally rovers: men who could never settle down, seekers for excitement and new things. The greatest cause of the Old World exodus, however, was the desire for better living conditions, for better homes, and for larger opportunity. This is what is generally called the economic reason for migration.

Religious and political disturbances: *The wars of religion.*—Early in the sixteenth century had occurred that great religious revolt, known as the Protestant Reformation, which had divided all Christians of western Europe into two parts, afterward called Catholic and Protestant. A little later the Protestants had separated into several smaller groups, not one of which was able to live at peace with the others. The result was over a century and a half of devastating wars and cruel persecutions.

We cannot give an adequate picture of the sufferings of the people during most of the sixteenth and seventeenth centuries. Those who wish to pursue the subject in more detail may read of the peasants of Germany, who, absorbing the spirit of revolt, in 1525 rebelled against their despotic lords and perished by the thousand for their pains; of the sixteenth-century war between the Protestants (Huguenots) of France and the Catholic rulers; and of the stand, during the same time, of the Netherlands against their ferocious Spanish masters.

It was left to the years 1618 to 1648, however, for mankind to learn how awful may become religious differences untempered by toleration. Then the general struggle known as the Thirty Years' War took place over western Europe. When it ended, the "Germanies" were desolate. The population probably was not over two-thirds what it had been at the beginning. Many districts that had been populous were so devastated that

they never recovered their former state — weeds, brush, and forests finally growing up where once people had lived.

As if religious troubles were not enough, the jealousies and ambitions of ruling families also tended to make war almost the normal state of affairs in Europe. To satisfy the whim of a princeling, many a home was destroyed, many a life lost. As to what the trouble might be about, the people who suffered knew little. But they paid for it all.

The Reformation in England. — Although the destruction and misery of religious and dynastic wars bore most heavily upon the people of the continent of Europe, nevertheless it was from England that the first great emigrations of home seekers to America took place. It is to England, therefore, that we must now turn.

Here one of the great economic results of the Reformation was the destruction of the monasteries by Henry VIII, and the seizure of their lands, which were given to the king's favorites. From these lands thousands of people were expelled, and many of them became the "sturdy beggars" of whom we shall soon have more to say. The reign of Elizabeth, the daughter of Henry VIII, during the latter half of the century was largely occupied with preparations for the great struggle with Spain — a struggle which culminated in the destruction of the Spanish Armada in 1588. While the Reformation in England did not lead to as great violence as on the continent, yet the land was kept in a continual state of anxiety and unrest, and the burnings and executions for religion's sake were not few.

Puritan dissent. — During the reign of Elizabeth, a new Protestantism, called Puritanism, sprang from the old, and upon this the old Protestants fell. At the beginning of the seventeenth century a law of the Church provided excommunication for all "recusants" — those who refused to accept the forms prescribed by the Established Church — and in 1604 for this reason three hundred ministers lost their places. At the same time a law of the land dealt out first, imprisonment,

and then banishment, for those who persisted in their refusal. But, as is usual in such cases, persecution only added fuel to the fires of revolt; and as the repression grew more strict, so, too, blazed more fiercely the flames of dissent against authority.

More important still, as the seventeenth century wore on, Puritanism became increasingly strong in the House of Commons. Until less than a century ago this body represented but a small, although very powerful, part of the English people — only those who were rich and well-born. Having at the beginning the simple duty of granting funds to the king, and the doubtful privilege of petitioning him for redress of grievances, it was destined finally to possess itself of all the powers not only of the king, but of the nobility as well. For a long time after its establishment, however, its authority grew but slowly. Throughout the sixteenth century, indeed, the self-willed and powerful Tudor family ruled almost without check.

It was not until the weaker Stuarts gained the throne in the seventeenth century that these representatives of the untitled aristocracy began effectively to question the rights and privileges claimed by the king. It was from the Commons that most of the great Puritan leaders sprang. The Puritans questioned the right of any other human being to regulate their mode of worship, and they fiercely denied the divine right of the king to rule unchecked. Such opinions drew down upon them the royal anger, and finally threw England into a civil war which resulted in the beheading of King Charles I and the establishment of the short-lived Commonwealth under the iron hand of the Puritans. It was during this struggle that the first great migration from England to America occurred.

Economic condition of the people. — Constant wars and religious and political persecution had brought matters from bad to worse for the European poor, and the greater part of the people were very poor. As economic distress was at the bottom of much of the emigration to America, a brief survey of conditions may be given here. Let us consider these

conditions under the following heads: (1) the price of goods, (2) wages, (3) landholding, (4) unemployment.

Prices. — For many years before the migration of the people began, prices of food had steadily risen. One of the causes was an increased demand. Explorers had begun to open up the world to Europe, and the people had been brought more and more into contact with the refinements and luxuries of the Orient. With knowledge came a growing desire for possession, so that articles imported from the East rose largely in price. At the same time the supply of gold and silver had been multiplied threefold, largely through the Spanish exploitation of the mines of Mexico and Peru. This increase in the supply of the precious metals meant a decrease in their value, so that a given amount of gold would purchase a far smaller quantity of goods in the year 1600 than it would have done two hundred years before. Thus, at the beginning of the seventeenth century the rising cost of living was causing its problems and discontent in Europe, just as it has been doing in America these early years of the twentieth century.

Wages. — Wages, on the other hand, did not rise much during the period. The pay for labor had never been high. Even for artisans the wage received could hardly have provided for more than a hand-to-mouth existence. For the common laborer, of course, matters were worse. The English farm laborer received in 1610 some six or seven pence per day, an amount equal in purchasing power in 1914 to perhaps one dollar.

Landholding. — In the seventeenth century rights in the soil in England and on the continent of Europe were possessed by only a few. It was the great landlord who held the land. Almost all others who would work upon the land must rent of him or work for him. In England the landlords generally let out portions of their estates to farmers, who paid them rent and hired laborers to do the work. On the continent the agricultural system of feudal days generally survived. The land was given out in small portions to the peasants, in return for which they were compelled to work a certain number of

days in the year on that part of the estate reserved for the landlord's own use. In addition they were met by penalties and exactions at every turn. For taking fish from the brook that ran by their cottages, for crossing a bridge, for grinding their grain, for pressing their grapes, and for endless other necessary activities, they paid tax or toll to the lord. What the lord did not take, the government very likely demanded in the form of taxes or enforced labor on roads and public works. The days of the poor were filled with an unending toil for which their reward was a bare subsistence. Oftentimes even this hope failed, for dying of cold and hunger was not such an unheard of thing. Worst of all, perhaps, it was in vain for a boy to hope to rise through industry and thrift to better things. He could only look out upon the world and know that as his father had worked and died, so must he work and finally die.

Unemployment. — "Where all parts of this realm of England and Wales be presently with rogues, vagabonds and sturdy beggars exceedingly pestered, by means whereof daily hap-peneth in the same realm horrible murders, thefts and other great outrages to the high displeasure of Almighty God, and to the great annoy of the commonweal"; — thus begins an act of Parliament of the year 1572.¹ In those words we have a picture of the tragedy in the lives of thousands of English men, women, and children. At the end of the sixteenth century England was swarming with people who were very poor. "There were never," said a writer of that day, "more people, never less employment; never more idleness, never so much excess."² This statement but voiced the common opinion of the times that the population of the kingdom was greater than it could support, and the remedy that began to take shape in men's minds was the colonization of the surplus. Although England was not at that time really overpopulated, as was proved in later years, still extreme and widespread

¹ Prothero, J. W., *Select Statutes*, 67-69.

² Quoted in Beer, G. L., *Origins of the British Colonial System*, 36.

poverty was prevalent. Thousands of children, of the aged, and of the infirm were without food and shelter.

Poverty was, however, not confined to the weak. The act above quoted goes on to tell who were meant by the "rogues, vagabonds and sturdy beggars." They were "all persons being whole and mighty in body and able to labor, having not land or master nor using any . . . lawful craft or mystery . . . all common laborers . . . able in body using loitering . . . all shipmen pretending losses by sea" — these men, able-bodied and out of work, were rogues, vagabonds, and sturdy beggars. Being a rogue, a vagabond, or a sturdy beggar was a crime for which the penalty was whipping or branding, or, for the obdurate, death.

Parishes were compelled by law to tax themselves for the support of their poor, to provide convenient abiding places — "almshouses" — for them, and to furnish hemp, flax, and iron on which to set them to work if they were able to work. The children of the poor, moreover, were to be put out to apprenticeship to whosoever would take them. In this way England attempted to deal with her problem of poverty. It placed a great burden upon the parishes, but it did not decrease the number of the poor. Eventually, it became almost impossible for the laborer to move from one place to another in order to get work, for newcomers were an object of suspicion and inquiry lest they become a drag upon the community. When the time came, therefore, the parishes were quite ready to ship as much of their heavy burden as possible to America.

Early explorations: *Origins.* — Most of the people whose condition has been described in the preceding pages never could have come to America without help. Before they could begin their migrations the expensive preparatory work of exploration must be done. For several centuries Europe had been growing more and more curious about the rest of the world. A gradually growing acquaintance with the East, also, as has been seen, gave rise to an increasing demand for a greater variety and abundance of the goods that the world might sup-

ply. In response to these motives daring Portuguese, Spanish, and Italian sailors ventured farther and farther out to sea, exploring the coasts of Africa and discovering new lands and routes of trade. As we know, America and the route to India were discovered in the course of these explorations.

The Portuguese and the Spanish. — During the sixteenth century the main work of exploration and colonization of America was done by the Portuguese and the Spaniards. The former got possession of Brazil, and the latter laid claim to the lands around the Gulf of Mexico. The Spaniards established themselves in the West Indies and conquered Mexico and Peru. They explored the southern part of North America and much of the great Western plains, while their ships also went up the Pacific coast.

English exploration. — Until the latter half of the sixteenth century the English had but little share in these enterprises. When they did begin they soon became the leaders, the most daring and aggressive of all. Hawkins, Drake, Gilbert, and Raleigh are familiar names in English sea annals. We should consider them pirates now, but their morals were not below the standards of the times. Hawkins and Drake gloried in a private warfare on Spain, raiding the coast of the Spanish main, attacking Spanish vessels, and stealing the cargoes of gold and silver. All this they did while Spain and England were "at peace." There is no doubt either that they received the secret encouragement of "good Queen Bess."

England's economic dependence upon the foreigner. — Toward the end of the century England began to take steps toward a more permanent form of exploiting the New World. This policy was based upon the hope of making herself independent of foreign powers which supplied certain of her needs. Because she was an island, England's trade must be carried on by sea. The attack of the Spanish Armada in 1588 also taught her that her defenses lay on the ocean. In addition, a great part of her naval stores had to be obtained from foreign powers, especially from those around the Baltic Sea. Many other sup-

plies came by way of the Mediterranean, or direct from India. Most of these things were secured not by direct trade, but through the Portuguese or the Dutch. The fisheries in the North Sea, too, were largely in the hands of the Dutch, and England depended much on fish for food.

Purposes of English exploration. — By exploring and colonizing America, England planned to free herself from the grip of the foreigner. She hoped to find a route to the Indies. The abundance of fish along the shores of America had already been proved, and through English colonists the forests of the interior could be secured for the building of ships. There was also the prospect of new outlets for English manufactures, at first by trade with the natives, and then by trade with the colonists themselves. Finally, in the belief that a nation's wealth is to be measured by the gold and silver that it has within its borders, there was the hope of finding these metals as the Spaniards had done.

Colonization as a business enterprise. — The government, however, did not, as a rule, direct the explorations, but instead worked through private individuals to whom it gave special inducements to pay for the risks. To settle new and unexplored lands is not an easy and safe undertaking. Men who went into such enterprises took the chance of losing all the money and labor that they might put into them. Consequently, in order to tempt capital into the undertakings, charters of incorporation conferring important privileges were granted by the crown.

The charters created corporations for business purposes, granting the right to do certain things, just as charters of incorporation do today. But the powers conferred in this manner were usually far greater than are now given. In the first place, they often gave to the companies very large tracts of land, and authorized them to settle colonists thereon. In the second place, they granted a monopoly of the minerals and other natural resources, and of the trade with the Indians or the colonists. In the third place, they put into the hands of

the companies the government of the people who should settle upon their lands. Sometimes these gifts of power and privileges were made to a single person instead of to a company.

In 1578 a patent was given Sir Humphrey Gilbert, and, after his death, was transferred to Sir Walter Raleigh, granting the right to settle "heathen and barbarous" lands and giving a monopoly on all the commodities to be derived from them. In 1600 the first charter of the East India Company gave a monopoly of the trade between England and the East Indies, including the coasts of Africa and Asia and the adjacent islands. With similar purposes in view came the chartering in 1606 of the London and the Plymouth companies, through which the first permanent settlements of Englishmen in America were to be made.

The grants to the London and the Plymouth companies gave each the right to one hundred miles along the coast and one hundred miles inland, the lands of the former to be between the thirty-fourth and the forty-first parallels, and those of the latter between the thirty-eighth and the forty-fifth. The government of each was to be in the hands of two councils, one to reside in England, and the other in the colonies to manage local affairs. They were also given rights to all minerals except a portion reserved for the king. They were authorized to send out colonists; to provide them with food, clothing, and munitions; and to take measures for their defense. No one was to settle within the limits of the grants or trade with the colonists without the consent of the companies.

These were the privileges tempting capital to America. The risks, however, were greater than the privileges, and the profits never made up for the losses. Yet the returns to the nation were manifold; for the initial enterprise of the companies and the proprietors started people toward the New Land, and it needed only a few assured settlements to induce others to come in an ever-widening stream. Thus, new markets for English goods were gradually built up; new outlets for the seemingly overcrowded peoples of Europe were provided; and new avenues

of hope were opened for the sturdy and the ambitious, the distressed and discontented of all nations. America had become the land of hope.

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QUESTIONS

1. What were the causes of the first migrations from Europe to America? Which of the causes do you consider the most important? Do the same causes bring immigrants to America today?

2. Describe the results of the religious disturbances in Europe during the sixteenth and seventeenth centuries.

3. What were the results of the closing of the monasteries by Henry VIII?

4. What were the leading principles of Puritanism? What was the attitude of the authorities in England toward the Puritans? What was there about the membership of the House of Commons which eventually made it a very powerful body? Did the Puritan leaders come generally from the lower and poorer classes, or were they men of rank and wealth? What were the results of the Puritan Revolution in England?

5. What were the causes of the rise of prices in the sixteenth and seventeenth centuries? Can you show that rising prices would tend to cause men to migrate? Do wages ever rise as fast, and in the same proportion, as prices?

6. What were the ordinary conditions of landholding in England and on the continent of Europe? Show how the conditions rendered the position of one born to poverty almost hopeless. What were "rogues, vagabonds and sturdy beggars"? Had the closing of the monasteries anything to do with their number? What were the penalties for vagabondage? What legal provisions were made for the care of the poor? What changes were taking place in England during the fifteenth and sixteenth centuries which would be likely to cause vagabondage? CONSULT Cheyney, E. P., *Industrial and Social History*, 142-147.

7. What part did capital play in the settlement of America? Was the voyage of Columbus more daring than those of other explorers? Which were the chief exploring nations? Where were European powers established in America before the English?

8. Were Hawkins and Drake pirates? What is the "Spanish Main"?

9. How did England's economic position make colonies desirable?

10. What were the terms of the charters granted Sir Humphrey Gilbert, the East India Company, and the London and Plymouth companies?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that capital had a greater influence in the settlement of America than poverty.
2. Resolved that the voyages of Vasco da Gama were more remarkable as sea exploits than those of Columbus.
3. Resolved that greater credit is due the Portuguese and the Spaniards than the English for the colonization of America.

CHAPTER II

THE BEGINNINGS OF THE GREAT MIGRATIONS

The colony of Virginia

The New England colonies

Plymouth and Massachusetts Bay

The isolation of New England

Connecticut, New Hampshire, Maine, and Rhode Island

Maryland

The Dutch and the Swedes

Later English colonies

The Carolinas and the Jerseys

Pennsylvania

Georgia

Later colonial immigration

The demand for men

Methods of securing settlers

German immigration

Economic condition of the immigrants

Slave traffic and slave labor

Intercolonial migrations

The colony of Virginia. — The attempt of the Plymouth Company to colonize within the limits set by its charter soon collapsed, and for a number of years the London Company's efforts seemed also likely to end in failure. Many of the immigrants lacked the patient fortitude and the discipline necessary to the pioneer. A system of communistic shareholding also discouraged individual effort. Moreover, disease, starvation, and Indian attacks soon claimed the greater part of the settlers, and had it not been for the timely arrival of relief ships with food and men, the colony would undoubtedly have met with a speedy end. Of 5649 persons who had left England

for Virginia between 1606 and 1625, there were but 1095 living in the colony in 1625. Many had become discouraged and returned home, but the greater part of them had died. The colonists had to learn that successful pioneering involves hard labor. To secure this, stern discipline had to be introduced. For a number of years they failed to provide for themselves sufficient food, and managed to exist only with the addition of supplies obtained from the Indians, or sent to them by the company in England. About the year 1616 they at last found in tobacco a crop that could be raised easily and that could be turned into the necessities of life by exchange with England. From this time on the settlers gradually increased in numbers, working their way inland along the James, the York, and the Potomac rivers, and their branches. By 1635 the population was about 5000, and the colony was firmly established.

New England colonies: *Plymouth and Massachusetts Bay.* — The Virginia colony had been established, supported, and, until the charter was taken away in 1624, closely supervised by the company in England. With the passing of the company the government took up the work of supervision. Connection between England and the colony was, therefore, maintained. The bond was strengthened by the tobacco industry, which led to close trading relations with the home country. In the case of the Plymouth and Massachusetts Bay colonies these bonds were lacking. In 1620 the Council for New England became the successor to the Plymouth Company, and in 1628 it made to the Massachusetts Bay Company a grant extending from three miles north of "any and every part" of the Merri-mac to three miles south of any part of the Charles, and west between the parallels drawn through these points to the Pacific. This company was made up of a group of men who were dissatisfied with religious and political conditions, and the more active members took the charter with them to their new homes to serve as a constitution for the government of the colony.

The isolation of New England. — From the first the colonists had little to do with the company in England and less with

the government. The same is true of the Plymouth colony, which had started out under the auspices of the London Company, but which had landed within the jurisdiction of the Council for New England. Trade connections were likewise missing. The new England colonies became at once self-sufficient. They raised foodstuffs and caught fish, neither of which they could market in England. Shipbuilding materials, which England needed, could not be sent in the early years on account of the cost of transportation. Finally, the struggle between the crown and the Commons diverted the attention of the government from the colonies, and sent many thousands of emigrants to New England. It came to pass, therefore, that the New Englanders were left much to themselves for the first thirty years of their existence, and the population grew rapidly. In 1643 it had reached sixteen thousand in Massachusetts Bay alone.

Connecticut, New Hampshire, Maine, and Rhode Island. — The first three of these colonies were also settled under grants by the Council for New England during the years of strife in England. A large share of the early settlements in these districts was made up of those who had already begun to emigrate from Massachusetts, the beginning of the penetration of the northern half of the continent by New Englanders. In logical continuation of the right to dissent from authority, Rhode Island was settled by a group of men and women who would not bow to the established religious doctrines of Massachusetts Bay.

Maryland. — While the great emigration to Massachusetts was in progress, Lord Baltimore had secured from Charles I title to lands lying north of the Potomac and extending west to its source. This was the origin of Maryland. Here Baltimore established his landed estate and a government founded on the principle of religious toleration. This was the first of the proprietary colonies, the proprietor having the right to make laws with the consent of the "freemen," generally landholders, and to grant land to the colonists. The first settle-

ment was at St. Mary's, and from there the people gradually spread along the shores of the Chesapeake.

The Dutch and the Swedes.— While the English were colonizing the coast to the north and the south, the Dutch and the Swedes were busy midway between. Dutch trading posts had been established early in the seventeenth century at the mouth of the Hudson and farther north at Fort Orange. In 1621 the charter to the Dutch West India Company was issued, giving a monopoly on the trade all along the coast. In order to secure real settlers as distinguished from fur traders, the company offered in 1629 large tracts of land along the Hudson and Delaware rivers to any person who, within four years, should transport fifty colonists to New Netherlands. As a result lordly estates — the “patroonates” — and more humble homes slowly spread along the Hudson and into the Jerseys. The colonists from Massachusetts along the Connecticut River, however, prevented the further extension of the Dutch in that direction.

At the same time a Swedish trading company similar to the Dutch began to plant colonies in what is now Delaware. The settlers never came in great numbers, however, and finally fell under the sway first of the Dutch and then of the English.

Later English colonies (1664–1682): *The Carolinas and the Jerseys.* — During the Civil Wars and under the Commonwealth there was little colonizing activity, but with the Restoration in 1660, it began again with renewed vigor. The king, wishing to reward some of his favorites, made proprietary grants which resulted in the provinces of New Jersey, the Carolinas, and Pennsylvania. With the exception of Pennsylvania, these later proprietary governments lasted but a short time, and the colonies passed under the crown. The people, however, trickled in, no matter what the government. Men from surrounding colonies and from overseas came to the Jerseys. Virginians had already settled around Albemarle Sound in the Carolinas. The Carolina proprietors also established colonies on the Ashley and Cooper rivers, emptying into Charleston harbor.

Pennsylvania. — Pennsylvania originated as the result of several grants made to William Penn during the years 1680 to 1682. The colony was founded on the principles of practically complete religious toleration. This attitude was not only unusually liberal for the time, but it was evidence of shrewd business sense as well, for it attracted many rent-paying settlers. Penn's organizing ability was shown in the careful planning and successful building of Philadelphia on the Delaware River. Settlers came both from England and the continent, attracted by a vigorous advertising campaign. The territory immediately around Philadelphia was largely occupied by Quakers, but to the south and west the Germans and the Scotch-Irish poured in for sixty years before the Revolution.

Georgia. — Georgia was established (1733) by philanthropists as a refuge for financial failures. It was a protest against the debtor prison. The proprietors tried at first to exclude slavery and to prevent the building up of large estates. They failed in both respects, and soon handed the control of the colony back to the crown. Being on the frontier, exposed to the Indians on one side and to the Spaniards on the other, its population remained small throughout the colonial period.

Later colonial immigration: *The demand for men.* — On the part of the trading companies and the proprietors there was an active search for emigrants to the new land. Their profits, if any, were to come from the furs and the fish, from the gold and silver, from the rent of land, or from the products of the soil. The success of their enterprises, therefore, depended upon their ability to get men to emigrate. After they had been displaced by the government, the commercial and naval interests of the country were also furthered by an increasing colonial population. From the colonies, too, as they became well established, there was a never-ending call for more men. Here the demand was for strong men and "lusty boys" who could endure long hours of hard labor, and for those who could turn their hands to many kinds of work.

Methods of securing settlers. — The companies and the pro-

prietors advertised widely both in England and on the continent. Their tracts quite equaled any modern real-estate advertisement. They praised the great natural resources and the salubrity of the climate, and dwelt upon the ease with which a fortune could be acquired. The fortunes were, indeed, there, but for the average pioneer they were to be secured only by the hardest kind of labor. In England cities and parishes were easily induced to send their poor, especially their children, who were in great demand, and thus to rid themselves of a financial burden. The London Company took a large number of children from London, for each of whom it received five pounds sterling from the city. William Penn spread his pamphlets widely in Germany, an activity which was followed by the first large German immigration to this country.

Kidnaping children and even older persons became a common occupation in England. The kidnapers were known as "spirits," and among the ignorant country people there came to be a feeling of terror in regard to them. Often the "spirits" would drug a man, who might awake to find himself on ship-board bound for America. An instance is told of how a young girl was induced to go on board a ship by the promise of a position in Virginia, which was represented as a place a little below Gravesend on the Thames. So great became this evil that the government finally passed laws with severe penalties against the practice. Nothing, however, could completely stop the traffic. Agencies of a more legitimate nature set themselves up in London and Bristol, advertising for servants for America. Those who responded to the advertisements were sold to merchants or shipmasters, and by them were exchanged later for the colonists' produce and merchandise.

Political offenders were deported by the English government. After the defeat of Charles II at the battle of Worcester, many Scotch who had fought with him were sent to America. A Scotch revolt in 1678 led to the deportation of others. Most of them went to the West Indies, but some landed on the continent of America. Cromwell also sent away many Irish

after he had subjugated them. The Hanoverian kings and the Scotch clashed in the eighteenth century, and many Scots came to America between 1715 and 1745. The government also took to deporting convicts, some of whom landed in the continental colonies. During the last quarter of the seventeenth century numerous French Huguenot immigrants also came in, chiefly to the Carolinas. As the immigrants came, they were followed by a large number of their friends. For the most part, since the tide-water lands were occupied by the planters and the earlier colonists, these newcomers finally settled in the back country along the foothills of the mountains, whence they became the advance guard of that greater westward movement through the mountain barriers out upon the fertile valleys and plains beyond.

German immigration. — The German migration began about the end of the seventeenth century and continued until the Revolution. "Soul stealers" had the same function in Germany that the "spirits" had in England. Most of the Germans, like the Scotch, sought the Middle colonies, especially Pennsylvania. Hundreds and even thousands would land at ports on the Delaware in a single year. They, too, finally found their way to the westward fringes of the inhabited regions. Estimates place the number of Germans in Pennsylvania in 1776 at from fifty thousand to ninety thousand.

From the foregoing paragraphs it will be seen that America had become the "melting pot" of nationalities long before the nineteenth century began.

Economic condition of the immigrants. — Most of the immigrants we have been describing came as servants. Of course many of the first arrivals in all the communities were not of this class. Such were the Puritans of the great migration (1630-1640), the early Virginia and Maryland planters, many of the Dutch, most of the Quakers, and the settlers on the seaboard of the Carolinas. As time went on these groups were added to by the servants who acquired their freedom and took up lands. For seventy-five years before the Revolution, how-

ever, by far the greater number of the immigrants arrived in the condition of servitude.

Slave traffic and slave labor. — Negro slaves were imported early in the seventeenth century, but for many years they constituted only a small part of the labor force. For the first fifty years their importation was effected by the individual efforts of Dutch, English, and colonial traders. In 1662 the Royal African Company was chartered by the English government with the Duke of York, afterwards King James II, at the head. This company was granted a monopoly of the trade on the west coast of Africa, and began at once to push the traffic in slaves. After twenty years this trade was thrown open to all, and from the beginning of the eighteenth century there was a rapid increase in the employment of slaves, particularly in the tobacco and rice fields of the Southern colonies. Negro laborers came to be preferred there because they seemed to be better able to stand the climate, because their terms of service did not end until death, and because their children also were slaves. The planter was thus relieved of the constant necessity of renewing his supply of labor, a fact of much importance where labor was in such great demand. In the course of the eighteenth century, therefore, slave labor almost entirely displaced white labor in the colonies south of Pennsylvania, and was employed more or less in most of the others.

Intercolonial migrations. — One of the significant facts of American history has been the constant flow of the population into the wilderness. The migrations which we have just described should be looked upon only as one lap in a journey that was to continue unchecked to the Pacific. Probably no one thing has had greater influence upon American character than the fact that there has always been, until recently, a frontier. The following account, written by Governor Winthrop of Massachusetts Bay in 1636, furnishes a picture the counterpart of which might have been seen by the thousand at any time during the next two hundred and fifty years:

“ Mr. Hooker, pastor of the church of New Town, and most

of his congregation went to Connecticut. His wife was carried on a horse litter, and they drove an hundred and sixty cattle and fed of their milk by the way."

Thus the heart of the continent has been searched out and penetrated by families with their possessions, along the trails and through the wildernesses, on foot or in horse-drawn vehicles, or down the streams on flatboat, barge, and raft. The impelling causes were much the same as those which had driven



Courtesy of The Halliday Historic Photograph Co.

THE PARSON CAPEN HOUSE, TOPSFIELD, MASSACHUSETTS, BUILT 1683

them from the Old World. In the early colonial days religious and political intolerance compelled some local shiftings of population. The primary motive for intercolonial migration, however, was land hunger. Hooker's band found more and better land along the Connecticut than it could secure in eastern Massachusetts. Before the end of the seventeenth century New Englanders could be found in every colony, and in large numbers in some of them.

Likewise the eighteenth-century stream of newcomers from Scotland, Ireland, and Germany passed by the settled dis-

tricts to the unoccupied lands of the back country. Servants whose time was up (p. 65) also swelled the crowd of land seekers. By 1760, then, we find the lands from New England to the Carolinas, as far inland as the rivers reached, securely in the hands of the white man, who, within this region, had displaced the Indians. Outside, the latter silently and defiantly watched the gradual and inevitable absorption of their hunting grounds. Facing the Indians were the frontier col-



INTERIOR OF A NEW ENGLAND PIONEER'S HOME

The women were always busy. Note how the construction of the cradle enables this mother to rock the baby to sleep with one foot while both hands and perhaps the other foot are busied with the spinning.

onists. They were settled on the upper reaches of the rivers, along the foothills of the mountains, or in the valleys between. Most of them were the "meaner sort" of people. They had gone there for land. For this they had assumed the burdens of frontier life, and had made of themselves a protecting buffer against the Indians for the settlements farther east. Even now they were hardly to be restrained, so eager were they to begin the attack upon the vast and mysterious regions the other side

of the mountains. They knew that untold stretches of land, for which they were ready to dare all things, lay beyond.

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2. The early years of the Jamestown colony. CHANNING, EDWARD, *History of the United States*, I, 176-202; FISKE, JOHN, *Old Virginia and Her Neighbors*, I, chap. 4.

3. The early years of the Plymouth colony. BRADFORD, WILLIAM, *History of Plymouth Colony*, 92-126; CHANNING, EDWARD, *History of the United States*, I, 293-317.

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QUESTIONS

1. Describe the settlement of Virginia. How did tobacco affect the colony?

2. Compare the Virginia colony with the New England colonies. Why was there little communication between England and New England? What were the limits of the grant to the Massachusetts Bay Company?

3. What was a proprietary colony? What were Lord Baltimore's purposes in founding Maryland?

4. What evidences were there that America was becoming the "melting pot" of nationalities in colonial days?

5. Describe the "patroonates." How were the later English colonies established?

6. What evidences can you find that most of the early colonizing efforts were, in part, business enterprises? Enumerate as many motives for founding colonies as you have so far discovered.

7. Compare the kind of men desired in America in the seventeenth and eighteenth centuries with the kind desired in the twentieth. From what sources came the demand for men in colonial days? Why has the demand for men been greater in America than it is in most European and Asiatic countries?

8. Describe the various methods of securing emigrants. From what nationalities did most of them come?

9. Give what reasons you can for the difference in station between the first settlers and those who came later.

10. By what agencies were negro slaves brought to America? Why did slavery become more general in the South than in the North?

11. Where was the first American frontier? What evidence have you found in this chapter that the "westward movement" began in early colonial days? What were the motives of the movement? Why were those who went to the back country considered the "meaner sort" of people? Why did the Scotch-Irish and the Germans generally settle in the back country?

SUGGESTED QUESTION FOR DEBATE

1. Resolved that the Europeans had no right to take the land from the Indians.

CHAPTER III

FISH AND FURS: SHIPBUILDING AND COMMERCE

Frontier trade conditions

Fish, ships, and furs as factors in colonial development

The fishing industry

 The lure of the fisheries

 The New Englanders and the fisheries

 The whale fisheries

Shipbuilding

The fur trade

 General importance

 The fur trade and international relations

 The fur traders and the Indians

Colonial commerce

 Commodities and markets

 Colonial currency

 Transportation

The mercantile system

 Protection to agriculture

 Protection and encouragement of manufacturing

 Colonial raw materials and markets

 The development of a merchant marine

 Englishmen as middlemen

 The balance of trade

 The British navy

The Molasses Act

Frontier trade conditions. — The colonists never produced a variety of articles large enough to fill all their needs. Some wants had to be supplied by foreign markets. At no time, however, were the colonial exports sufficient to pay for needed imports. Throughout the colonial period the settlers were debtors to Europe. Only in Virginia and the Carolinas did

the surplus for export come near to providing a favorable balance. To add to the difficulties of trade, at no time in their history did the colonies have an adequate or uniform currency. Under such circumstances the problem of paying their debts to foreign creditors was one that was constantly pressing. That the people solved the problem is a witness to their abundant energy and ceaseless activity.

Fish, ships, and furs as factors in colonial development. — What the colonists lacked in articles of exchange they made up by carrying goods for others and by skillful trading. The foundations of colonial trade lay in fish and furs. It would be difficult to exaggerate the influence exerted by these two commodities upon American life. The fisheries supplied an important article of food. They were the foundation of a very active shipbuilding and carrying trade, and furnished one of the main articles of exchange in the West Indian trade, the most profitable field of colonial commerce. The call of the fisheries, with the combination of forests and sea, soon made shipbuilding a leading source of income. Furs also were important in building up colonial trade. They furnished one of the main impulses to expansion during early days. At the forefront of the westward movement went the fur traders. Furthermore, trade in furs was most intimately connected with colonial Indian relations.

The fishing industry: *The lure of the fisheries.* — Long before the English had begun to settle in America, French fishermen were busy in the waters of Newfoundland and along the New England coasts. Throughout the sixteenth century hundreds of their vessels visited these shores every year. Likewise, one of the great impulses driving the English to exploration and settlement was the knowledge that a great store of fish lay in the waters of the New World. Many years before the first great emigration, English fishermen had begun to try their luck in American waters. The English government, perceiving the connection between a large fishing fleet and population and a strong merchant marine and navy, rendered more and

more encouragement to the industry. Among the regulations to that end was the setting aside of certain days of the week on which fish should be substituted for meat as food. By the end of the sixteenth century, it was stated, there were one hundred and forty-three days of the year on which fish constituted the sole legal animal-food diet.

The New Englanders and the fisheries. — As soon as the colonists began to arrive, they, too, set out upon fishing. Their



Courtesy of Allan Forbes, State Street Trust Co., Boston.

AN OFF-SHORE CAPTURE

The earliest captures of whales, whether in Europe or America, were made from the shore. The Indians sometimes made such captures before colonial days.

first object was to procure food. When, after a few years, this question had been settled, they began to look to the fisheries for an article of exchange. Three men in a boat could catch ten hogsheads of mackerel in a week, according to Governor Winthrop. As the New Englanders extended the scope of their operations, more and larger boats were required. Gradually, fishing centers grew up along the New England coasts — Salem, Marblehead, Boston, Monhegan, and finally

Gloucester. By 1670 the ventures of the New Englanders led them to the Grand Banks of Newfoundland and to the mouth of the St. Lawrence, and upon these grounds they established an extensive industry. Around 1700 they were sending out from New England ten million pounds of dried fish every year. By the time of the Revolution one thousand ships and ten thousand men were engaged in the industry.

The whale fisheries. — Of almost equal importance from the point of view of shipbuilding and trade was the pursuit of the whale. Beginning with chance captures in small boats off the coast, the New Englanders ended by fitting out larger and swifter ships in order to follow the whales to their home grounds "among the tumbling mountains of ice beneath the Arctic circle. . . . under the frozen Serpent of the South," and on the coasts of Africa and Brazil.¹

Shipbuilding. — Along with the growth of the fishing boats there sprang up a very active industry in the building of ships for the carrying trade. In this activity New England led all the other colonies, but the industry also flourished on the Hudson and the Delaware and in Chesapeake Bay. Late in the colonial period many of the best ships were built in the Carolinas and in Virginia. During the last fifty years before the Revolution several hundred colonial-built ships were engaged in the West Indian and the European carrying trade. Many also were sailing between colonial ports. Their size ranged from vessels of thirty and forty tons to three hundred tons burden, the latter being approximately the size of the largest in the British merchant marine.

Oftentimes ships were built and immediately sold in England. They could be constructed more cheaply in the colonies, as the English oaks were giving out and much other material had to be imported from the Scandinavian countries or from America. It is stated that it cost about one-half as much per ton to build vessels in the colonies as it did in England. The quality, too, was of the best, especially of those built of

¹ Burke, Edmund, *Speech on Conciliation*.

the Southern live oak, a wood much used in all colonial ships. Many vessels were built in America on order directly for the English merchants, while others were put first into the colonial carrying trade and afterward sold on one of their voyages.

The fur trade: *General importance.* — The colonists depended mainly upon the Indians for their supplies of furs, and the relations between the two, whether for good or for evil, were often bound up with questions regarding the trade. One of the first steps taken by the settlers to decrease the balance of trade against them was to develop and extend commerce with the Indians. The Virginians early began the traffic, Governor Berkeley's interest in the fur trade having been assigned as one of the causes of Bacon's Rebellion. Other Virginian governors were deeply engrossed in the business. The sole purpose of the Dutch West India Company was, at first, the opening up of trade in furs, and their profits, if any, came in this way. The Pilgrims commenced the traffic at once, extending their operations to the coasts of Maine, where their agents met the Indians coming down the rivers. The early New England settlements along the Connecticut had for one of their objects the forestalling of the Dutch, who were establishing trading stations in this region. When the Carolinas were settled the people immediately turned to the fur trade, thus laying the foundation of many a Carolina fortune. Georgia was founded in 1733, and Augusta became the center from which the white man made his trips to the interior. There he met the Indians and secured annually many thousands of skins.

The fur trade and international relations. — Fishing and fur trading were at the bottom of many of the difficulties which arose between the English colonists on the one hand, and the French and Indians on the other. From 1689 to 1763 an almost continuous state of warfare between England and France had its echoes in America. Until the Seven Years' War, which closed the struggle, activities here were mostly confined to colonial expeditions for the preservation and ex-

tension of the fishing grounds and the fur-trading enterprises. When the New Englanders fitted out an expedition which took Port Royal, Nova Scotia, their object was to protect the fishing grounds and to secure a flank position guarding the Maine borders and fur-bearing regions from French and Indian attack. For similar reasons border warfare was fought on all the exposed frontier during much of the time. Especially true was this in those colonies situated where French or Spanish influence over the Indians was strong.

The most momentous struggle, however, took place for the fur-bearing grounds along the Great Lakes and far beyond. Peltries from hundreds of miles to the westward came to the East. It was over this trade that a large part of the intrigues of the English and the French with the Indians took place. Furs might reach the East via the Lakes and the St. Lawrence to Quebec and Montreal, or via the Lakes and the Mohawk to Albany. To secure the monopoly of this trade the English and the French made use of the Indians. The Iroquois held the regions along the Mohawk. The Hurons were situated north of the Lakes. Devastating wars between these rival forces finally ended in the supremacy of the Iroquois. Then followed intrigues to gain their favor and their trade. In the end their allegiance was secured by the English, who were able to offer better bargains than were the French. At Oswego, on Lake Ontario, through the coöperation of these tribes, a fort was established which made secure the gateway to the fur grounds of the West. Through this alliance Albany was safeguarded against French attacks by way of Lake Champlain. Moreover, to it is largely due the victory of the English colonists in their share in the great war between England and France which ended in 1763.

Fur traders and the Indians. — In the prosecution of the trade with the Indians little credit for high moral standards may be placed to the balance of the white man. In bartering skill the savage proved no match for his civilized brother. The latter desired furs, which would secure for him things

of permanent value. The childlike nature of the Indian demanded the trinkets of childhood. He gladly traded rich furs for red and green dyes, beads, looking and burning glasses, and cheap but highly colored cotton cloths. Other things of more practical value, such as hatchets, knives, kettles, scissors, and steels, also found a ready market with him.

What the Indian longed for most of all, however, were rum and firearms. Few traders ever set out on their expeditions without a supply of these commodities. Amidst scenes of the wildest excesses following upon free dispensation of "fire-water," the trader cheated the stupefied savages out of their wares. Many were the complaints made by the Indian chiefs against this debauching of their people, but in spite of every protest the trade not only went on, but kept increasing. Colonial laws against the sale of rum and arms to the Indians proved of no avail. A petition from the merchants of Albany against a law forbidding the sale of strong drinks to the natives plainly discloses the traders' attitude. The Indians' wants are so few, it first explains, that few furs supply their needs, "whereas when the vent of liquors is allowed amongst them, it spurs them on to an unwearied application in hunting in order to supply the trading places with furs and skins in exchange for liquors."¹

Colonial commerce: *Commodities and markets.* — Trade from colony to colony soon began. In the early years of New England, Virginia sent her wheat and cattle. Later on the operation was reversed, provisions from New England often being traded for tobacco from Virginia. New England and other English colonies traded with New Netherlands also, although contrary to English law.

To much of the colonial produce — flour, wheat, and other provisions — the English market was closed by law, but an outlet was found in the West Indies, in Spain and Portugal, and in the Canaries and the Azores. The most profitable trade was with the West Indies. These tropical islands demanded

¹ O'Callaghan, *Documents Relative to the Colonial History of New York*, VII, 613.

large quantities of certain colonial products, and they produced things that could be used in the colonies or exchanged in Europe. The West Indian planter needed lumber, cereals, flour, meat, fish, and slaves. He could supply molasses, sugar, cotton, and some fruits. A ship from Boston or Newport would sail laden with lumber and foodstuffs for the Barbados and there take in exchange for these articles molasses and sugar. The better grades of fish with which it first started it might carry farther to Spain and Portugal. The sugar it would take to England, get English and European goods in exchange, and thence return home. The molasses would be made into rum at the numerous distilleries of Newport or Boston, and the rest of the cargo would be disposed of among the colonial merchants. Again the ship would sail, laden with rum for Africa. There the rum would be exchanged for negroes, who would be taken to the West Indies to be sold to the planters as slaves. In these numerous exchanges it is estimated that the shipowners would make from fifty to one hundred per cent. An ordinary profit on a voyage from the colonies to the West Indies was fifty per cent, but if the vessel went on touching at English and European ports and turning over the cargo once or twice, the profits were doubled. It was in this way that the colonial merchants kept even with their English creditors.

Colonial currency. — One of the serious hindrances to trade in the colonies was the lack of money. This was particularly true of the domestic trade. As we have seen, the foreign trade was carried on mostly by the exchange of goods, money being used only to balance accounts. But the products of the different colonies were too much alike to permit of a large trade among them. It was in the local trade of a community that the lack of money, especially of small change, was most severely felt. In only one case was the coining of money attempted. Massachusetts for a time in the seventeenth century minted a coin which was called the Pine Tree Shilling, containing three-fourths as much silver as the English coin. Even

this was made the object of inquiry by the English government.

The value of a convenient medium of exchange is well illustrated by the Indian trade. The New England colonists at first were greatly impeded in their attempts to purchase furs by the lack of some article which they had and which the Indians wanted. At last they found that wampum would answer this need. This was followed by an immediate quickening and expansion of trade. Later on other articles such as rum, firearms, and ammunition were found, as we have seen, to serve as well or better for this purpose.

Because of the lack of coin upon which to base a paper money, the issuance of the latter was attended with many dangers, but in desperation all the colonies finally had to resort to this expedient. Paper money is nothing but credit money; it is merely the state's promise to pay. If the government has good credit, that is, if all the people believe in its willingness and ability to redeem its promises, then they will ordinarily take the paper at its face value. If they have some doubts on the matter, however, they will be less disposed to take the paper, with the result that, if it passes at all, it must do so at less than face value.

These laws of paper money are well illustrated by the colonial paper. In all the colonies the issues fell in value. In some they declined so much that the money was worth little more than the paper out of which it was made. That of North Carolina and Rhode Island came to be worth not over one-twentieth of the face value. Such a currency, of course, was worse than useless. The issues of certain colonies — New York, Pennsylvania, and Massachusetts — held their own fairly well. Another disadvantage of such money was that it would not circulate readily outside the colony where it was issued, on account of the uncertainty as to its real value. For the purposes of intercolonial trade, therefore, it was useless.

Transportation. — Lack of roads further impeded intercourse among the colonies. The only land trails were at first those

of the Indians, which had to be traveled on foot. Gradually these were widened to horseback paths and in some cases to wagon roads. These roads were first made between the towns of a community, such as those around Massachusetts Bay. Then they were finally built between the larger towns, one connecting Boston with New York via Rhode Island and the Connecticut shore, and another connecting New York, Perth Amboy, and Philadelphia. Most of the trade between



VIEW IN NEW YORK, 1746

The windmill in the distance is probably supplying the power for a gristmill.

colonies, however, had to be carried on by water. No towns of any size could hope to grow up away from a river or the ocean.

The mercantile system. — In 1660 it was generally believed in Europe that when a nation prospered its prosperity was at the expense of some one else. In other words, when a people became wealthy, it was the result of having drawn wealth from other people. The commercial and industrial practices worked out under this belief are known as the mercantile system. Inasmuch as the policies of all European countries

were directed in accordance with this system, and since these policies affected vitally the interests of their colonies, it is necessary at this point to devote some space to the topic.

The mercantile system as worked out in England included the following objects: (1) the protection of agriculture from outside competition, (2) the protection of manufacturing from outside competition, (3) the utilization of her colonies as sources of supply of raw materials and as a market for manufactures, (4) the building of a greater merchant marine, (5) the establishment of English merchants as middlemen in the world's trade, (6) the maintenance of a favorable balance of trade, and (7) the development of a stronger navy as a protection to the whole system.

Protection to agriculture. — In order to protect the interests of the landlords an import tariff was laid on foodstuffs late in the seventeenth century. This prohibited the entrance of such agricultural products as were raised in England, except when there was a great scarcity, and, consequently, high prices. The benefits of this legislation to the landlords may easily be seen. It was also expected so to stimulate agriculture as to make the country independent of foreign supplies. On account of the laws, however, the colonies had to find other markets for their cereals.

Protection and encouragement of manufacturing. — The tariff had for many years also served as protection to English manufactures. In 1660 a new tariff law laid duties on practically everything that came into England or her colonial dominions, as well as on most exports. Many manufactures, indeed, were excluded altogether.

Certain protective measures aimed to forestall competition from colonial manufactures, which, in a few cases, had developed considerably by the end of the seventeenth century. In 1699 an act forbade the exportation of manufactures of wool from the colonies to foreign ports, from colony to colony, and from place to place within a colony for the purpose of sale. In 1732 the exportation of colonial beaver hats was made illegal,

and in 1750 the iron manufacture in its advanced stages was forbidden altogether.

Colonial raw materials and markets. — It was plain, however, that if the colonists were to buy English manufactures, they must have something to buy with. Encouragement, therefore, was given to the production of raw materials. Beginning with the eighteenth century bounties were at different times paid



Courtesy of Essex Institute, Salem, Mass.

A COLONIAL SCHOONER JUST BEFORE THE REVOLUTION

The many activities of the colonists on the sea resulted in the development of this high-class type of sailing ship.

on many articles of colonial production. A few examples are naval stores, indigo, hemp, flax, timber, and pipe and barrel staves. Import tariffs were removed from pot and pearl ashes, lumber, pig and bar iron, and a number of other commodities which could be used in English manufacture. In addition, on certain English manufactures destined for the colonies the export duties were lowered, and in some cases they were removed altogether.

The development of a greater merchant marine. — Ever since the end of the fourteenth century England had had laws designed to restrict to English vessels the importation into the realm of certain articles. It was not until 1651, however, that the first of a succession of acts designed to exclude all foreign shipping and seamen from the British carrying trade was put into effect. In that year the so-called first navigation act forbade any vessels other than English built, owned, and manned to bring goods to the British Isles from any part of Asia, Africa, and America. Trade between England and European ports was permitted in English vessels or vessels of the nation in which the goods originated. This law was aimed primarily at the Dutch, whose vessels were doing much of the carrying trade for all other European countries. There ensued a struggle between the Dutch and the English in which the former were worsted, while their colonies in North America and their place as the principal carriers of Europe were taken by the English.

Inasmuch as "English" vessels were later interpreted to include colonial vessels as well, this law, which was reënacted in 1660, was a great stimulus to the colonial shipbuilding and carrying trade, and the output of ships, especially from New England, was greater than ever before. For England the law resulted in a growing array of ships and trained seamen sailing under her authority.

Englishmen as middlemen in the world's trade. — In the navigation law of 1660 an important step was also taken toward making English merchants the middlemen in the trade between Europe and the rest of the world. This act stipulated that certain "enumerated" articles produced in the British colonies and not in England should be exported only to the British Isles. The articles enumerated in the act of 1660 were sugar, tobacco, cotton-wool, indigo, ginger, and fustic and other dye woods. From 1660 until 1764 the list was gradually extended until it included rice, naval stores, copper, furs, hides, iron, lumber, and pearl ashes.

The North American colonies were most interested in tobacco, naval stores, and rice. Iron, lumber, and pearl ashes were not enumerated until near the outbreak of the Revolution. Tobacco planters complained the loudest, maintaining that the restricted market caused the price to fall. If other European people wanted Virginia tobacco they had to go to England for it, and in the exchange the English merchants would take their profits. The same was true in the case of all enumerated goods.

In order to offset the losses and inconveniences of the restricted market, certain compensatory advantages were granted the colonies. In the case of tobacco, the colonists were given a monopoly of the English market by tariffs which excluded Spanish tobacco and by laws forbidding tobacco raising in England. In 1730 the restrictions on rice were partially lifted, so that the Carolinians might ship their product directly to the southern European countries. As we have seen, also (p. 37), advantages in the way of bounties or reduced tariffs were given the colonists on some enumerated goods.

In 1663 one of the most important of the navigation acts was passed. In order to maintain a greater "kindness" between England and the colonies, and to render the latter more "dependent" upon England and more "beneficial" to her, as the act states, no product was to be shipped directly from any European country to the colonies. All such goods must be obtained from England. Here again the English merchant benefited from his position as middleman.

These restrictions made direct trade between the colonies and Europe illegal or very difficult. Even the trade in non-enumerated articles was slowed down — or would have been with strict enforcement of the laws — because of the inconvenience of getting return cargoes. The laws were not enforced, however, and direct trade between the colonies and European nations constantly went on. Consequently, the colonial traders were not hampered as much as might be supposed. Moreover, England was the natural depot of Euro-

pean supplies for the colonies, and thither they would probably have turned even had there been no restrictive laws.

The balance of trade. — The principal object of the mercantile system was to attract into a country a constant stream of precious metals. Spain secured this end through her gold and silver mines of Central and South America. England hoped to secure it by always maintaining a "favorable" balance of trade. In the passage of tariff and navigation laws and in the restriction on colonial manufactures which we have just reviewed, England had in mind the favorable balance. Her merchant marine and its monopoly of the carrying trade, her position as supply station for Europe and the colonies, her attempt to exclude competitors from markets which she desired, and her exchange of high-priced manufactures for cheap raw materials, — all were intended to bring in the golden flood.

The British navy. — As a protection to the growing empire and the expanding trade, the navy was made stronger. In this work the North American colonies served well. To free herself from dependence on the Scandinavians, from whom she had hitherto secured much of her naval supplies, England offered to the colonists inducements for the production of these commodities. Most of these inducements we have already noted. One further regulation forbade private individuals to cut trees suitable for masts from any unappropriated lands. Such trees were marked and taken for the royal navy.

The Molasses Act. — We have seen that the North American colonies had built up an active trade with the West Indies, the chief products procured being molasses and sugar. As these commodities could be obtained more cheaply from the French and Spanish islands, their trade had grown at the expense of the British. Owing to the clamors of the British West Indian planters, Parliament in 1733 passed the Molasses Act. This law laid prohibitory duties on sugar and molasses imported into the North American colonies from the non-British West Indies. Like many other restrictive laws, however, the Molasses Act was not enforced. If it had been it

would have hit the New England rum industry, and consequently the African slave trade, a hard blow. Moreover, it would have deprived the colonists of one of their best markets for fish, lumber, salt meats, flour, and other provisions. As it was, an extensive system of smuggling maintained the trade in all its activity, and postponed for a time what later came to be a serious cause of colonial discontent.

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QUESTIONS

1. Why were colonial imports always greater in value than the exports? Did this condition signify a lack of prosperity? In what ways other than by exporting goods can imports be paid for?

2. Why were the fisheries and the fur trade so important to the colonies? Trace the growth of the New England fisheries. In what respects would whale fishing have especial influence in developing foreign commerce?

3. Trace the growth of the fur trade. What political results came from this trade? What was the importance of the fur trade of the Great Lakes? What were the relations of the traders and the Indians?

4. Show how fishing and shipbuilding accompanied each other. What advantages had the colonists for shipbuilding?

5. What were the means of transportation in intercolonial trade?

What determined the location of colonial cities? Locate the chief ones. Name at least three conditions which prevented any large intercolonial trade.

6. What were the principal foreign markets for colonial produce? Name the chief colonial exports. How do differences of climate affect trade between different regions? Show how slavery stimulated colonial trade.

7. What is the use of money in the exchange of goods? At the present time is it always used in commercial transactions? Why was currency so scarce in the colonies, and what were the inconveniences resulting from the scarcity? Discuss paper money as a medium of exchange. Give an account of colonial paper money.

8. Can you refute the theory that a nation's or an individual's prosperity must be attained at the expense of some one else? State the main objects of the English mercantile system.

9. Does an import duty on foodstuffs benefit everybody? How did the English duties on cereals affect the colonies?

10. Does a tariff on manufactures benefit everybody? What were the measures taken by England to protect her manufacturers? What measures did she take to make the colonies a source of supplies for her manufactures?

11. What were the provisions of the Navigation Acts of 1651, 1660, and 1663? What were the purposes of each? Explain just how each act would affect the colonies. What compensations were made the colonies by England?

12. What was the Molasses Act? Would the enforcement of this act have injured any English interests?

13. What is meant by the "balance of trade"? Could all nations maintain a favorable balance at the same time? Is a great navy necessary to a nation that has a large foreign commerce?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the fur trade was more influential on colonial development than the fisheries.

2. Resolved that British trade regulations stimulated colonial development more than they hindered it.

3. Resolved that in 1750 the position of the English along the Atlantic Coast was economically superior to that of the French in the Mississippi Valley.

CHAPTER IV

LAND TENURE AND AGRICULTURE

Basis of land tenure in royal charters and Indian cessions

Early communistic experiments

Development of the colonial farm

 The plantation in Virginia

 The New England small farm

 Pennsylvania and Maryland

 New York landed estates

 Other colonies

 Quit rents

Agricultural methods as affected by

 The abundance of land

 The scarcity of labor

Agriculture in New England

 Diversified industry

 The colonial farm an industrial school

Agriculture in the Middle colonies

Conditions in the Southern colonies

The plantation system

 The influence of tobacco

 The influence of abundant land

 The plantation labor system

 The marketing of tobacco

 The plantation system in other colonies

 The results of the system

The small farms of the South

Agricultural implements

Colonial live stock

 Origins

 Care of live stock

 Wool growing

Basis of land tenure. — Among the privileges granted to the chartered companies and to the proprietors was the right to

dispose of the lands assigned to them. Title to land was thus based upon grants made by the British sovereign. When the colonial governments got the right to apportion lands, they generally went through some form of treaty with the Indians. Nevertheless, treaties did not prevent Indian attacks, as we well know. The Indian's idea of land as a hunting ground did not harmonize with private ownership. Until they learned better, in many cases the Indians thought that they were merely giving the white man the same kind of right to the soil which they themselves had always possessed — the right to hunt or fish upon it. They little thought that they were surrendering the land forever.

Communism. — The original plans of the London and Plymouth companies called for a kind of communistic landholding. In the earliest colonies the settlers were shareholders in the companies. Shares were sold at from ten to twelve pounds. An immigrant who paid his own way over, or a man who paid the passage of another, received one share. The land belonged to the company. The profits from agriculture, fishing, mining, and fur trading were to be divided among the shareholders whether they resided in England or in America.

This coöperative scheme did not work. The industrious and the frugal saw the fruits of their labor and wisdom shared equally with the lazy and the heedless. Furthermore, free land offered too tempting a chance for individual ownership. Consequently, in Virginia and Plymouth there was soon a distribution of the land among the settlers, and thenceforth the companies sought their profits in monopolizing colonial trade.

The development of the colonial farm: *The plantation in Virginia.* — After the failure of the communistic schemes, the apportionment of the land fell to the local colonial governments. By 1650 there had become established in Virginia what was known as the "head right." Under this custom fifty acres were given to every person who should pay his own way to the colony, or to any person who should at his own expense provide for the transportation of some one else. Ac-

cordingly, the more prosperous planters rapidly increased the size of their estates through the importation of servants and slaves. Little effort seems to have been made to verify the lists of names of immigrants. The custom was oftentimes greatly abused, and many a planter received fifty acres of land for each of a number of persons who did not exist at all. Finally, even the pretense of the head right was given up, and the only requirement for securing a tract of land came to be the payment of a fee to the colonial secretary for its registration. In this way the lands of Virginia were given out to the inhabitants, and in the process the choice positions along the banks of the rivers were absorbed by a few men. That part of Virginia bordering the navigable streams became a land of great estates. Those who arrived later were forced back to the head waters of the rivers and into the mountain valleys, where the land was poorer and the farms smaller.

The New England farm. — The government of the Plymouth colony made distributions of small parcels of land to the settlers, and in the Massachusetts Bay colony the General Court, established by the charter, from the first took charge of the matter. The plan followed was to grant a few hundred acres to any group of men who undertook to start a new town. The town authorities were given the right to distribute lands and admit other members to the town. After the first distribution there was usually left over a large tract to be held in common, where the animals belonging to the members were herded. As others were granted admission to the community, they were given a few acres of land from the common. The grants were, as a rule, small, varying from a mere house and garden lot to twenty-five or thirty acres. As the process continued until well into the eighteenth century, however, the common fields were gradually absorbed. This kind of distribution prevented the growth of large estates, and, together with the barrenness of much of the soil, paved the way for the diversity of industry which later was to be found in New England.

Pennsylvania and Maryland. — Lord Baltimore's and William Penn's methods of land distribution were similar to each other. Any man who should settle in these colonies was granted one hundred acres. If he had a wife, children, and servants, a certain acreage was granted for each of these. In this way considerably larger estates were built up than in New England, although they were smaller than the tide-water plantations of Virginia.

New York landed estates. — In New York the Dutch West India Company offered large tracts of land along the Hudson River — sixteen miles on one side, or eight miles on both sides of the river, and inland as far as the land could be occupied — to persons, called "patroons," who should settle fifty people on the grant. When the English conquered the Dutch, the royal governors made grants of land, with the consent of the assembly. Many abuses grew up with this practice. Some governors would give huge amounts of land to certain men in their favor. The result of the system of patroonship and of the grants by the governors was the establishment of the largest estates in the colonies, some men holding hundreds of thousands of acres. Attempts were made during the first half of the eighteenth century to get the assembly to revoke these grants, but the members of the assembly were themselves in many cases the holders of the land, and by their influence virtually controlled the politics and government of the colony. They "flinched," therefore, as Governor Bellomont said in 1699, whenever the matter was brought before them.¹

Other colonies. — The Carolinas, in general, followed the example of Virginia, large estates being the rule near the coast, with smaller ones in the back country. Since Georgia had been founded for philanthropic purposes, the landholdings there during the colonial period were comparatively small.

Quit rents. — The holding of land in all the colonies except New England and Georgia was conditioned upon the payment of quit rents. That meant the annual payment of a small

¹ O'Callaghan, *Documents Relative to the Colonial History of New York*, IV, 553.

sum varying from two to four shillings per hundred acres. This sum went to the proprietors or to the crown. As a rule the rent was not regularly or satisfactorily collected. In Virginia the collectors were often landholders and were inclined to be easy with others of their class. In New York the great landlords succeeded in almost completely evading the rent. Only in Maryland and Pennsylvania was the revenue of more than trifling proportions. The Baltimores seem to have been successful in getting their dues and Penn somewhat less so.



DUTCH COTTAGE IN BEAVER STREET, N. Y., 1679

Agricultural methods: *The abundance of land.* — The methods of the colonial farmer were more or less slipshod. To the business side of farming attention was rarely given, and the science of agriculture had been but little developed anywhere in the world up to the end of the colonial period.

Moreover, under colonial conditions scientific agriculture would not have been economical. Nothing could have induced the farmers to conserve the forests and the soil, or care properly for their animals. The forests were so dense and extensive that they were a nuisance to be eradicated as soon as possible. The land was so cheap and abundant that it did

not pay to keep up its fertility. For the same reason it was more profitable to let animals wander at will, picking up for themselves their precarious living, than it would have been to build shelters for them and give them proper care. In later pages we shall see that American agriculture up to within the last fifty years always had the same conditions of cheap and abundant lands to retard its development along scientific and businesslike lines.

The scarcity of labor. — The forests, therefore, the farmer rid



A DUTCH HOUSEHOLD IN COLONIAL NEW YORK

There seems to be less severity and greater good cheer in this household than in that of the New Englanders shown on p. 23. But notice that the women are usefully employed.

himself of by ruthlessly cutting, burning, and girdling the trees. When his cultivated land began to lose its productivity, he moved to new fields. We shall see how this method was followed in the tobacco fields of Virginia. The case was extreme in this colony, but the principle was the same in all the others. Everywhere there was a gradual shifting to fresh lands farther west. The labor of fertilizing was worth more than the land itself. From colonial times onward the farmer

always had to consider whether land or labor was the more expensive. As labor was generally scarce and relatively high, it was saved at the expense of the land, which was abundant and cheap. It is said that the farmers sometimes in colonial days even moved buildings to get them out of the way of great heaps of manure which had accumulated, rather than spend the labor necessary to spread the dressing upon the land.

Agriculture in New England: *Diversified industry.* — In New England rocky soil and unfavorable climate obstructed agriculture, but the majority of the people had to follow this occupation in order to get food. Owing to hostile nature, however, and, in the early years, to a lack of intercourse with the mother country, the New Englander had to turn to many other sources of income. On the seashore he became a ship-builder, a fisherman, and a merchant. Inland he was a fur trader; and on all the farms he was a mechanic and domestic manufacturer. As a farmer he produced a measure of all the cereals, vegetables, and such fruits as could withstand the climate. He raised horses, cattle, hogs, and sheep. At the same time he made his own clothing, many of his tools and implements, and his household furniture. He ground his own grain and sawed or hewed out his own lumber. There was everywhere an abundance of water power, which he soon began to use. As time went on, however, and population increased, specialization began to take place. Some farmers found that certain of their many activities offered greater profits than did their stony acres. More and more the farms were neglected, while the farmer devoted his time to weaving, tanning and shoemaking, iron and tool making, sawmilling, and shipbuilding.

The colonial farm as an industrial school. — At the end of the colonial period New England was still a farming community, but the foundations for its later manufacturing industry had been laid. It should never be lost sight of that the training for this future industrial development was obtained on the New England farms. Equally as important is it to remember

that this training resulted from two principal factors. The first one was the natural conditions, which were unfavorable to agriculture and favorable to manufacturing. The second was the character of early New England labor. Here the indentured servants and the slaves were fewer than in either of the other two groups of colonies. In estimating the causes of the many-sided development of New England industry, it is impossible to lay too much emphasis on the fact that the owners of the farms, together with their wives, sons, and daughters, supplied almost all the labor required. The farm thus became the technical school from which the skilled labor of the future was drawn.

Agriculture in the Middle colonies. — What has been said of New England is true, with some modifications, of the Middle colonies. Here also the owners of the farms worked upon them. Although there were more indentured servants, these, too, in a majority of cases, soon set up for themselves (p. 65). The climate and the soil, however, were more favorable to agriculture. The farms grew larger and a staple product — the cereals — was developed. This group, on this account, came to be known as the “bread colonies.” Although here, too, the farmers were domestic manufacturers, yet because of the greater profits in agriculture alone, there were always large numbers of people who stuck to farming as a business. Throughout the colonial period, therefore, and long afterward, agriculture remained a principal occupation, although there was developing out of the training received on the farm, just as in New England, a solid foundation for manufacturing later on.

Conditions in the Southern colonies. — The Southern colonies furnish a striking contrast to the other two groups. The climate and soil were ideal for agriculture. Staple crops — tobacco, rice, and indigo — were early discovered to be so profitable that others were largely neglected. This fact led to the system of great plantations. Moreover, a ready market was found for these staples in England and on the continent,

so that the domestic industries characteristic of the Northern groups of colonies were less necessary. From the very first Virginia and the Carolinas depended upon the purchase of necessary manufactured articles, and sometimes even of food, by means of the staples raised on the plantations. As there was little diversification of crops, and not so much manufacturing as in the North, a less skilled labor supply was needed. Hence, we see a greater reliance on the indentured servant and the negro slave.

The plantation system: *The influence of tobacco.* — The plantation system in Virginia was due to tobacco and the abundance of land. Early in the life of the colony it was found that this plant could be raised with profit for sale in England and Holland. The prices which it brought for the first few years — two to four shillings a pound — greatly stimulated its production. The London Company and the English government tried persistently to encourage a greater diversity of crops and industry. Settlers were urged to set out mulberry trees for cultivating the silkworm, and vines for the production of grapes, and to produce lumber and shipbuilding materials. All these efforts failed. Competition with the profits in tobacco was impossible. It was with difficulty that the colonists were induced to raise enough cereals for their own use, and finally the Virginia assembly made it compulsory to plant two acres of grain for every worker on a plantation.

The influence of abundant land. — For some time the profits in tobacco raising were limited only by the amount of land and the number of servants that a planter could secure. The fortunate early settlers had little trouble in getting the land. The problem was to get labor. The land along the rivers was covered by unbroken forests, the clearing of which was the severest task on the plantation. It was, moreover, a labor that never ceased, as the tobacco plant rapidly exhausted the soil and made necessary a constant preparation of new lands, the cultivated part of a plantation being continually shifted as the soil wore out. The large size of plantations is partly ac-

counted for by the necessity of having on hand a supply of virgin soil, and the plantation system itself owes its growth, in part, to the fact that there was more land than the people could use.

Plantation labor. — In 1625 the population of Virginia was a little over one thousand, nearly one-half being indentured servants. Three years later fourteen or fifteen hundred servants were brought in. In spite of this, on account of the expiration of the indentures, there was great difficulty in getting enough men to work the plantations. In 1671, although in the meantime by far the greater proportion of immigrants had been servants, they numbered but six thousand. During this period the size of the plantations had greatly increased, averaging some five thousand acres. Many ran very much higher than this, one man's holdings at the end of the century reaching one hundred and seventy-nine thousand acres.

Although we shall later (p. 65) deal more at length with the introduction of slavery, it will not be out of place to touch upon the question here. It will readily be seen that slaves came to be used on the plantations because of the impossibility of getting anyone else to do the work. The plantations were so large and the attraction of the land to the indentured servants whose time had expired was so great, that the planters were finally compelled to turn to slaves in order to get any work done. We can, therefore, see how the abundance of land and the ever-tempting frontier had their full share in the establishment of slavery in America.

Marketing tobacco. — Large planters usually had boat landings of their own. Here small vessels which made their trips up and down the river branches would stop to take on the cargoes. The loaded hogsheads had to be rolled by human or brute strength for distances varying from a few yards to a quarter of a mile. A large planter usually acted as the shipping agent of the smaller planters of his neighborhood, or else he bought their tobacco outright. He would oftentimes run a general store where he would keep all sorts of English manu-

factures and other articles from which the neighborhood was supplied.

The great planter would have an agent in England, usually an English merchant, to whom he sent his tobacco. Through him the crop was sold and purchases for the plantation were made. No money was sent in payment for a cargo. If the value of the tobacco was greater than that of the purchases, the balance was entered on the books of the merchant against future orders. The balance, however, was generally against the planter, who was constantly in debt to the merchant.

The early high prices soon fell, owing to the increase in production and to the English laws forbidding the shipment of tobacco elsewhere than to England. The price of two or three shillings per pound in Virginia soon fell to three pence, two pence, and sometimes one penny a pound. The result was a long period of depression and hard times. In 1664 the Virginia and Maryland crops shipped to England amounted to fifty thousand hogsheads and brought one hundred and fifty thousand pounds sterling. In that year, nevertheless, the planters went in debt fifty thousand pounds. For many years after this the low prices continued. Laws were passed limiting the number of plants on a plantation or requiring the destruction of part of a year's crop. One summer certain of the planters took things into their own hands and burned all their tobacco. The price never rose to nearly its early values, however.

The plantation system in other colonies. — Tobacco culture extended to Maryland and the northern Carolina settlements. In fact these two colonies were to a great extent settled by emigrants from Virginia. In Maryland, however, the estates were not so large, the cereals were more extensively raised, and slaves were less numerous. In South Carolina the chief crops were rice and indigo, but the labor was done by slaves, and the proportion of blacks to whites became very much greater than in any other colony. Rice culture was largely responsible for this, the plants being best produced in the

swamps along the mouths of the rivers. Here the heat and the mosquitoes brought speedy death to the white laborer. The negro, it was claimed, was not so susceptible, and in consequence his assistance was much in demand. Unlike the planters of Virginia, however, those of South Carolina lived in close contact with one another, and Charleston became the seat of a brilliant colonial aristocracy, a society which could call forth praises for its generosity and courtliness from some of the conservative Old World writers, who could seldom see anything but clownishness in colonial manners.

Results of the plantation system. — A system of diversified crops and industries could not get a start in competition with the plantation. The staple crops bought a large part of what manufactures the planters used. This exchange of tobacco and rice for the necessities of life constituted by far the greater part of the commerce of the Southern colonies. The system prevented the full development for many years of a part of the country well endowed with natural resources. Long after colonial days the tobacco, rice, and cotton of the South were making the Northern people rich.

Tobacco planters lived miles from one another, so that intercourse was difficult. In Virginia towns and cities were almost nonexistent. On account of the frequent shifting of the tobacco fields to new land, the plantation buildings were often constructed only as temporary makeshifts. It even happened sometimes that when a planter left for new fields he burned some of his buildings to get the nails that were in them.

The most important result of the plantation was that it fastened slave labor on the South. It was figured that the labor of a slave on tobacco plantations would bring in on the average from fifteen to twenty-five pounds a year. The consequence was that by the middle of the eighteenth century over half the population of the South was black, and most of the labor was done by slaves.

The small farms of the South. — So prominent and influ-

ential were the planters, that the mistake is often made of overlooking the large part of the Southern colonial population that were not planters. As a matter of fact, the small farmers probably far outnumbered the planters. We have already had occasion to note the gathering of the poorer people on the lands above the fall line of the rivers, and along the foot-hills and in the valleys of the mountains. The number of these farmers grew rapidly. There were also large numbers located on small patches of land, generally of the less fertile sort, in the midst of the plantations. These people farmed much as they did in the North. There were the same domestic manufactures and the same diversification of crops. More important still, these small frontier farmers supplied the leaven of democracy which was wanting among the planters. Between the two there were often deadly feuds—the same struggle that for many centuries had gone on in England between the aristocracy and the slowly rising common people.

Agricultural implements.—The farmer was hampered by the lack of adequate tools. In the early colonial days plows were almost unknown. Such as the farmers had were heavy, awkward, and ineffective. They were made of wood, except that the point and the share were sometimes covered with iron. In the stony soil of New England and among the roots and stumps found in all the colonies, these implements must have been of little avail, but even they were beyond the reach of the ordinary individual. Towns in New England often owned a community plow, or gave lands to some person who would in return do the plowing for all. It was not until the last fifty years of the colonial period, when the roots and stones had been partly cleared away and the colonists had established an iron industry, that plows came into general use. Hoes, spades, and shovels were the tools everywhere employed to turn the soil and keep down the weeds. The sickle was the first harvesting implement, followed by the scythe, an American invention which trebled the effectiveness of a man's labor. To the end of the period, however, there were no

machines that worked automatically or with the help of draft animals alone. Work on the farm was human labor of the hard, back-breaking kind.

Colonial live stock: *Origins.* — The earliest explorers and settlers brought with them cattle, hogs, and sheep. De Soto, in his march across the southern part of the continent, drove before him a great herd of hogs. The Spaniards also brought with them cattle and horses, from which sprang the wild breeds that roamed the plains of Mexico and the West. The London Company sent cattle to Virginia with the earliest ships, as did the Plymouth Company to New England. The Dutch and the Swedes, likewise, brought animals with them to Delaware and New York. As time went on cattle, horses, sheep, and swine continued to be imported. From all these early breeds the original stock of the country sprang.

Care of live stock. — Nowhere was very good care given to the live stock. In the Southern colonies cattle, horses, and hogs were permitted to run at large at all seasons. In time many of them became wild animals, roaming the woods without owners. A favorite sport of young Virginian gentlemen was the hunting and capture of wild horses. Cattle were sometimes hunted like deer. Hogs multiplied very rapidly, and their numbers were kept down only by the depredations of wolves and Indians. Cattle thieves also often drove away the herds, taking them from Virginia to Maryland in order to escape detection. All this was rendered the more easy because it was the custom in Virginia to fence in only the crops. Laws were even passed forbidding the building of fences in such a way as to bar cattle from running at large upon any uncultivated fields.

The custom of permitting animals to roam at will extended north throughout the Middle colonies, although severe weather made it more necessary to round them up in winter or at night. In New England the animals were inclosed on the common for grazing, each freeholder having the right to put in a number proportionate to his landholdings. Generally the

New England towns employed a man or boy to watch the grazing cattle or sheep. In New England, too, the custom of fencing out the cattle was general, each freeholder being assigned the duty of keeping up a certain length of fence surrounding the cultivated fields. In some communities folds were put up in the pastures for keeping the sheep and cows at night. These folds were made of movable lengths of board fence contributed by the freeholders.

Wool growing. — As time went on and the need of wool for home manufactures grew, an increasing effort was made by the different colonial authorities to encourage sheep raising. Rewards were offered for the raising of sheep and for the best clippings of wool. This industry was discouraged by the English government, however, the exportation of sheep from England being forbidden by law. It was only by a species of smuggling that the colonists got any sheep from there at all. Nevertheless, New England, as well as the other colonies, was producing a fair quantity of wool by the end of the colonial period.

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QUESTIONS

1. Upon what were titles to land based in the colonies? What were the ideas of the Indians as to landholding?

2. What is meant by "communism"? What was the reason for the failure of the communistic plans of the London and Plymouth companies? How might the abundance of land affect such schemes?

3. Tell how the system of great plantations in Virginia was built up. Do you think the abundance of land was in any way responsible for the lax enforcement of the "head right" law? Did the mountains help in any way toward creating two kinds of agriculture in the Southern colonies?

4. How were natural conditions concerned in establishing the system of small farms in New England? Describe the method of land distribu-

tion in New England. In what way did stones, steep hills, and severe climate influence (1) the character of New England industries, (2) the size of the farms?

5. What were the conditions of landholding in Pennsylvania and Maryland? Compare the system here with those of Virginia and New England.

6. What were the "patroonates"? What other custom led to monopolization of the land in New York?

7. Give an account of quit rents. Could a person be evicted for non-payment of the quit rent? Can you see any reason why it would be especially difficult to collect rent in the early days of American history?

8. Why was careful agriculture impossible in the colonies? Do men usually do the things that are best in the long run, or those which are most profitable at the time? Describe the colonial treatment of the soil and the forests.

9. Why were most New Englanders farmers? What other occupations did they follow? Describe the average New England farm of colonial days. Show how the colonial farm was also a technical school.

10. Compare the agriculture of the Middle colonies with that of New England and Virginia.

11. How did conditions in the South differ from those in New England and the Middle colonies? Of what importance was the fact that the produce of the South had a ready market?

12. Why did tobacco raising monopolize the efforts of the tide-water settlers of Virginia? What efforts were made to induce them to diversify their production? Why was cutting trees and underbrush one of the greatest tasks on the tobacco plantation?

13. Show why the change from indentured servants to slavery was made.

14. Describe the methods of raising and marketing tobacco. What was the position of the great landlord in the community? Was it possible for a large plantation to be developed away from a river? Do you think there was any reason why a planter might not get full value for his crops? Trace the course of tobacco prices in the seventeenth century. Describe the plantation systems in Maryland and the Carolinas.

15. Describe the results of the plantation system.

16. What was done with lands not favorably situated for plantations?

17. Describe the agricultural implements of colonial days. Might it be possible that these implements were concerned with the establishment of slavery?

18. What were the origins of American live stock? What care was given to live stock in different sections? Were the cowboys of the Far West the only ones we have had in our history? Why was not better

care given to animals? What gave rise to the wool-growing industry? Why did this industry grow but slowly?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the system of landholding in Virginia was superior to that of Pennsylvania (or any other colony that you may choose).
2. Resolved that the frontier farmer was under moral obligation to future generations not to waste the land and the forests.

CHAPTER V

THE COLONIAL LABOR SYSTEM

- European systems of labor in the colonies
 - Apprenticeship in England
 - Sources of the colonial labor supply
 - Indentures
 - Labor requirements of the frontier
- Conditions surrounding colonial labor
 - The hardships of servitude
 - The hope of the future
 - Slavery and the abundance of land
 - Free labor the outgrowth of frontier conditions
 - The improved bargaining position of labor
 - The cost of living
- Labor organization

European systems of labor in the colonies. — When the pioneers began coming to America they brought with them their traditions regarding labor. These traditions had a profound influence upon the labor system of the colonies. No less far-reaching, however, were the changes wrought in the old system by the environment in which the settlers found themselves.

English apprenticeship. — The emigrants from England to America had grown up under the custom of learning trades through apprenticeship. Under a written contract called the "Indentures of Apprenticeship," a lad would be bound for a certain period of years to the service of an artisan. The latter, who thus became the "master," was bound to furnish the boy with food, clothing, and a home during the term of service, meanwhile teaching him the "mystery" of the trade. The boy promised to serve faithfully and obediently and not to divulge the secret of his master's art. It was also common for children, especially those of poor parents, or those who were

in the workhouse, to be bound out to service for a certain term of years, receiving in return their board and clothing without necessarily learning a trade.

Sources of the labor supply. — In chapter two we have seen how the chartered companies, the proprietors, and later the colonists secured laborers. The terms upon which most of them came were modeled upon the indentures, with which everybody was familiar. As the expenses of the trip to America ranged usually from eighteen to twenty-five pounds sterling, most of the emigrants were unable to pay their own way over. Consequently, those who might dispose of themselves bound themselves to a term of labor in return for their passage, and for their board and clothes during the period of bondage. For those who were not free — the so-called “criminals,” the waifs of the workhouses, and the victims of fraud and force — the terms of the bondage were arranged by others. Planters and others in need of their services would pay high prices for sturdy men and youths. The profits to be gained from a shipload of servants led agents, merchants, and shipowners, as well as the “spirits” and “soul stealers” (p. 19), to go into the business of securing them. The government and the parish authorities also, as we have seen (p. 19), willingly seized upon this method of getting rid of a portion of their undesirable population. The following advertisement in a Pennsylvania paper in 1729 is similar to many others to be found in eighteenth-century prints:

“There is just arrived from Scotland, a parcel of choice Scotch servants; Taylors, weavers, shoemakers and ploughmen, some for five and others for seven years; Imported by James Coult, they are on board a sloop lying opposite the Market Street Wharf, where there is a boat constantly attending to carry any one on board that wants to see them.”

The indentures. — The terms of the indenture varied. Ordinarily a child under sixteen was held until he should have reached the age of twenty-four. If he was older than that the term generally expired at twenty-one. In Virginia the accepted period for an adult came to be five years. A person who had

been deported for some crime or misdemeanor might be given a much longer term. In all the colonies, however, there was wide variation, the usual periods running from three to five years, the extremes from one to eight. This system of securing white servants, beginning with the first colonies, extended throughout the colonial period, and continued for a long time after we had won our independence.

Labor requirements of the frontier. — Most of the indentured servants were employed in agriculture. This is true of Pennsylvania, Maryland, and Virginia, the sections where this system of labor was the most common. In New England the servants were more often taught a trade. In general the labor system reflected the conditions of a region. The great industries in the colonies were clearing the wilderness and farming. This meant more than cutting trees and raising crops, however. As we have seen (p. 50), it meant supplying most of the necessities of life as well as the implements for work. There was great demand, therefore, for strength, endurance, and adaptability. It was not without reason that the American became a jack-at-all-trades and that America, at a later date, produced so many ingenious inventors.

Conditions surrounding colonial labor: *The hardships of servitude.* — The conditions under which laborers worked were not easy. The hours were long and the work was hard. Servants were often held in check by severe laws. The penalty in Virginia for running away was a lengthened term of service. The laws permitted whipping, and, in case of great obstinacy, mutilation. For some the stocks and pillory might be waiting. Servants were excluded from political rights, such as the suffrage or the administration of local affairs. As a rule they were not even called upon for defense. Nevertheless, their lot was not so hard on the whole as that from which they had come. Writers of the time differ in their accounts according to their points of view. It is certain that food was more abundant, clothing more serviceable and housing more comfortable than the average servant had been accustomed to at home.

The hope of the future. — When his term was up, in some colonies the servant might be assigned a few acres of land by the colonial government, or by the proprietor. Usually this would be on the outer fringes of the settlements, where land was yet unoccupied and cheap. Much of the intercolonial migration resulted from the moving into the back country of those who had been servants. We have accounts of freed servants going from Virginia as far as New York to take up unoccupied land. Thousands of Germans and Scotch moved from Pennsylvania to the cheaper lands in Maryland and thence to the regions between the Blue Ridge and the Alleghenies, where they met with other Scotch coming north from the Carolinas.

Hope of the future induced most servants to endure patiently to the end. Sometime they would be free. "There is no master, almost," says a writer of the middle seventeenth century, "but will allow his servant a parcel of clear ground to plant some tobacco in for himself which he may husband at those many idle times he hath allowed him." Then with the fruits of his industry he may get a "Sow Pig or two" and soon by their increase can buy a "Cow Calf," and by the time he is free, "he may have cattel, hogs and tobacco of his own and come to live gallantly." ¹ "To come to live gallantly," to be himself a landlord and no longer a churl, that was the hope of the colonial servant as it has been the hope of thousands who have sought the shores of America down to our own day.

The hopes thus drawing the poor to America were often fulfilled. It was not long before many a former servant became prosperous. There has been published a list of about fifty-five hundred names of indentured servants who entered Philadelphia during the years 1771-1773, together with the names of those to whom they were indentured. It is a significant fact that a large majority of the masters' names were Scotch, or Irish, or German.²

Slavery. — While natural conditions were thus bringing in-

¹ Hammond, J., "Leah and Rachel," in *Narratives of Early Maryland*.

² *Record of Indentures*, Philadelphia, 1771-73.

dependence to a large class of workers, upon another equally large they were helping to fasten the bonds of slavery. Where the farms were comparatively small and the number of laborers required was likewise small, the loss of service could generally be repaired by contracts with those who had lately arrived. Such were the conditions in all the colonies north of the Potomac. In Virginia, however, where the plantations averaged five or six thousand acres, and the number of servants required on each ranged from twenty-five to one hundred and fifty, the loss in any year of a large proportion of this number became a serious problem. The free servants were sometimes induced to remain on the plantation as hired laborers. As a rule, however, the planters were unable to compete with the lure of unoccupied lands, and toward the end of the seventeenth century they began to substitute negro slaves for indentured servants. By the middle of the eighteenth century the substitution had become practically complete. In the colonies south of Virginia, with the exception for a short time only of Georgia, slave labor predominated from the beginning. The original cost of the slave, of course, was greater than that of the servant, but in the long run it was much less, owing to the life-term service of the slave, and to the fact that the children of the slaves inherited their parents' condition.

Free labor. — Everywhere except on the Southern plantations, however, the frontier created free labor. Indentures expired and then the laborers were their own masters. In certain colonies, notably the New England, even the indentured servant was comparatively rare. In none of the colonies, it should be clearly understood, was there a numerous leisure class. In the North the farm owners and their families worked side by side with their servants, if they had any. Even in the South this condition existed far more than is generally supposed. As we have seen (p. 55), the number of large planters always was small, although their influence was great, while the number of small, independent farmers constantly increased.

As time passed and industries of somewhat larger and more

specialized nature grew up, the number of free wage-earning laborers became greater. By the end of the colonial period there was a large percentage of such workers as distinguished from the indentured servant and the slave. This was most noticeable in those colonies where manufacturing, shipbuilding, and other industries had begun to compete with agriculture.

Improved bargaining position of labor. — Other frontier conditions also helped to improve the position of the laborer. The immigrant had come from a place where labor was superabundant, and where opportunities were few. The worker had always been in the position of suppliant. He found here a huge continent untouched by the hand of man, with all its vast resources to be developed. He found thinly settled communities without organized industries, very much in need of everything that only labor could supply. As commerce and manufacturing became better established, the need of workers became more insistent. The cry was for men, men "precious as gold," "agriculturally strong" men; "highland boors" who could clear land; carpenters who could lay brick; smiths conversant with heavy work and curing cattle; coopers, wheelwrights, and workers in iron.¹ Thus the laborer found himself in a novel position. Here he did not have to beg a chance to dispose of his labor, taking for it what might grudgingly be offered. He was no longer the suppliant, but was in a position to share in making the terms. Moreover, if he chose not to work for any man at all, the land was always beckoning him to a life of independence.

Wages began almost at once to rise. Various colonial governments early attempted to fix a legal maximum wage for common laborers as well as for artisans. The Massachusetts General Court in 1630, 1633, and 1636, and several other times during the century, passed acts to regulate the trades and to limit wages. Other colonial legislatures did likewise. In Massachusetts the experiment of placing the control of wages in the hands of the different towns was also tried. Such laws were

¹ O'Callaghan, *Documents Relative to the Colonial History of New York*, I, 367, 371; II, 11, 12, 76, 158.

but attempts to transfer to America the stifling conditions under which the workingmen of the Old Countries lived. Nothing could show better than the continual rise of wages in the face of repressive acts like these, how natural conditions in America in these years tended to bring economic freedom to all men. Both the employer and the laborer were equally ready to disregard the law. Although the acts of Massachusetts attempted to fix the wages of skilled workmen at two shillings per day and those of the common laborer at considerably less, yet we find constant testimony that higher wages were paid. At the end of the seventeenth century skilled laborers easily secured about four shillings per day and the common laborer about three shillings. Fifty years later the wages of the skilled laborer were around five and six shillings per day.

Cost of living. — "Corn and flesh, and what else serves them for drink, food and raiment, is much cheaper here than in England," says a writer at the end of the seventeenth century.¹ Another a few years later, holds it "certain that no person that has his hands and will work can starve in that country."² With wages high, with living cheap, with work of some sort constantly at hand, and with the land ever tempting him from his employment, the laborer was in a strong position, and he did not hesitate to take advantage of it.

Labor organization. — Owing to frontier conditions there was practically no organization of labor during the colonial period. In the first place industries were not large enough to bring many workmen of the same kind together. As a rule each man was for himself. A shoemaker might be itinerant, going from house to house making the shoes for a year. Perhaps he would set up his shoemaking shop in a room in his house and do the work brought by his neighbors. The boys of his family and sometimes an apprentice would work with him.

We also have seen that there were few specialists in industry. There probably would be several means of increasing

¹ Thomas, Gabriel, *An Account of Pennsylvania and West New Jersey*.

² O'Callaghan, *Documents Relative to the Colonial History of New York*, V, 196.

a workingman's income. He would be likely to have a plot of land and a few animals. The histories of colonial towns often show grants of land and other privileges given to induce shoemakers or blacksmiths to settle in their midst. Not only from his land might a laborer increase his income. There was so much to be done that all kinds of enterprises were open to him. One record of a skilled laborer at Braintree, Massachusetts, at the end of the seventeenth century, shows that he earned four shillings a day when he worked at his trade. In addition he was a farmer, a maker of laths in winter, and a painter, a carpenter, and a messenger as well. He burned brick and bought and sold live stock. Besides all this he was an officer in the Braintree militia and constable of the town. It would be difficult for such a man to know just what union he ought to belong to. Such cases, far from being unusual in colonial days, were to be found in large numbers.

Finally, for the greater part, men were working for themselves. The difference between employer and employed was very slight, if it existed at all. There was, in other words, no large group of men dependent for their living upon another group. Each man and each group was self-sufficient. Out of such conditions it is no wonder that a strong individual self-reliance became a dominant characteristic of the American. It was an individualism breeding confidence in self, but suspicious of coöperation and organization.

Toward the end of the colonial period, however, there can be seen traces of a sharper division of labor. In the larger towns we find shoemakers with several journeymen occupying a room in which all worked together. This we may call a factory. Shoes were made there usually on order. The stock of leather was owned by the master of the shop. In Boston we find the shoemakers endeavoring to come together into an organization which aimed to monopolize the industry, so as to protect the quality of the shoes. In the same town we see weavers with several looms and with facilities for combing wool and for fulling. In other towns of New England and in New York

and Philadelphia the same process was going on. It was a very slow gathering together of workers of the same trade in preparation for future organization and the larger enterprises yet to come.

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QUESTIONS

1. How did a boy learn a trade in England in the sixteenth century? What were the indentures of apprenticeship? What was meant by the "mystery" of the trade? How would frontier conditions affect the labor system as to (1) the kind of work performed by the apprentice, (2) the possibility of disposing of one's own labor?

2. What were the sources of most of the colonial labor supply? Describe the ordinary colonial indenture. Show how colonial conditions created a greater demand for unskilled than skilled labor.

3. Describe the conditions under which the indentured servant lived. Why were men ready to undergo the hardships of indentured service? Give some evidence showing them to have been justified in putting up with temporary hardships.

4. Why did slavery supplant the system of indentured servants in the South and not in the North? Did the abundance of land have anything to do with the establishment of slavery?

5. What influence tended to create free, wage-earning laborers?

6. In what ways did frontier conditions improve the conditions of wage earners? Aside from wages and prices, what are the differences between colonial and present-day conditions which made it possible for one to live on less than now? Is it possible to establish wages and prices by law? Give reasons for your answer.

7. Why were there practically no labor organizations in colonial days? What changes in the industrial situation became discernible by the end of the colonial period?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the colonial laborer was better off than the laborer of today.

2. Resolved that distinctions of class were more marked in colonial days than now.

3. Resolved that the lot of the colonial woman was harder than that of the men.

CHAPTER VI

COLONIAL MANUFACTURES

The influence of environment on manufacturing

 The market conditions

 The raw materials

 Capital

 Labor supply

 The purchase of manufactures from England

Household manufacturing

The manufacture of cloth

 Household beginnings

 Legislative encouragement

 Domestic system of textile manufacture

 British attitude

 Textile manufacture at the end of the colonial period

Manufactures of leather

 Tanneries

 Shoemaking

 Regulation of the leather industry

Iron manufactures

 Crude-iron production in the seventeenth century

 Crude-iron production in the eighteenth century

 Bloomeries

 Methods of a large colonial iron works

 Iron foundering and forging

 British policy toward the iron industry

 The iron industry and the Revolution

The manufacture of hats

Flour and lumber manufacture

Summary of colonial manufactures

Summary of the colonial period

The influence of environment. — Colonial manufacturing depended primarily upon four influences — the market, raw materials and other natural advantages, the available capital,

and the labor supply. While the natural advantages were very great, the situation as to the market, capital, and labor was such that the growth of manufacturing on a large scale took place but slowly, and the higher grades of manufactures were purchased from abroad.

The market. — Among the colonists, thrown upon an undeveloped wilderness, there was from the first a keen demand for certain types of manufactured articles. Poverty, however, prevented much buying, especially of the finer and more expensive goods. Moreover, in their rude surroundings there was little use for such articles, particularly in the earlier days of colonial life. The early demand, therefore, was, in the main, limited to the necessities of life — food, clothing, shelter, tools, household utensils, and arms. Corresponding to this demand the early colonial manufactures were articles which would supply the immediate and pressing needs of the people. The methods of manufacture, therefore, were simple and crude; the articles turned out were for use and not for ornament.

Raw materials and other natural advantages. — Of the natural advantages the most apparent were the forests, the soil, the water power, and the minerals. The forests supplied the raw material for houses, ships, tools, casks, household furniture, pot and pearl ashes, tanning materials, and other necessities. From the soil might be produced materials for milling, for certain kinds of textiles, and for dyeing. Upon it could be raised sheep for wool and cattle for hides. In most of the colonies, too, swift-running streams were numerous, and their power was soon put to use. Of iron there was an unlimited supply, although the best deposits were not discovered during colonial days. Coal was also left for the use of future generations.

Capital. — In the seventeenth century there was little capital in the colonies; consequently, we can expect to find few manufacturing enterprises of large size, even for those days. Wealth slowly accumulated, however, and we begin to see some signs of this in the manufacturing enterprises of the eighteenth century. Capital was not attracted to manufacturing, even in the later

period, however, chiefly on account of the restricted market. Of foreign markets there were practically none, and the domestic purchasing power, as we have seen, was small. Therefore, what capital there was generally sought employment in more promising fields, such as agriculture or trade.

The labor supply. — We have already pointed out the great demand for laborers of all kinds, especially in agriculture, and the difficulty of getting them. Skilled labor was even more difficult to obtain. Such workmen were in better condition at home than the others; consequently the wilderness offered less temptation to them. Moreover, the crude character of colonial industry afforded small promise to the artisan.

The call of the land also disorganized the labor supply. Artisans frequently yielded to the advantages offered by the cheap and abundant land, threw up their trade, and became farmers. An indirect result of this tendency was an advance in the rate of wages (p. 67). The evidence of the writers of those days is all to the effect that manufacturing which could compete effectively with foreign-made goods was impossible on account of the high price of labor. For this condition the land was held in a large degree responsible.

Purchase of manufactures from England. — We have said enough to show that conditions for manufacturing for the market were very poor, especially in the earlier colonial days. It was even impossible to secure all that was needed from England, because for a long time the colonists were unable to buy much of anything. Their wants were great, but their purchasing power was small. Tobacco and rice, flour and other provisions, fish, furs, whale oil and whalebone, ships and ship-building materials, pot and pearl ashes, all of which early became and long continued to be important articles of exchange, were still not enough to supply the needs of the people for manufactured goods.

Household manufacturing. — The conditions surrounding the four essentials to manufacturing outlined above established in the colonies the system of manufacturing for household and

farm use only. To be sure, this was the system to which the people had been used in England. In America, however, conditions were such, especially in the lack of purchasing power, that household manufacturing was an important part of the industrial system until long after the end of colonial days and for many years after the factory had superseded the household and domestic systems in England. In colonial days a large part of the manufactured articles used were the products of the ordinary household and farm duties (p. 50). Manufacturing certain articles was a part of the "chores" of the men and boys, of the household duties of the women and girls.

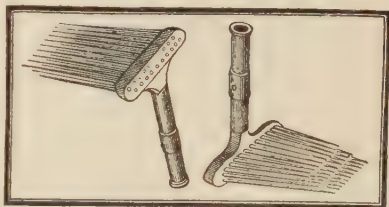
The manufacture of cloth:

Household beginnings.— Few households failed to have spinning wheels, and a large number possessed looms.

This was true even in those Southern colonies where tobacco and rice afforded the means of exchange for foreign-made articles. The spinning

was the duty of the women, the weaving that of both men and women. Oftentimes, however, a weaver would set up a loom in a community and take in the yarn to be woven. This was the domestic system, based on the market and not on the household. Sometimes itinerant weavers would go from house to house, either doing the entire process, or merely the "fulling." In such occupations we see the beginnings of a separation of this activity from the household, and of its development into a specialized industry. Much of the dyeing of the fabric was also done in the household. Even the making of the dyes of orange, yellow, and blue from the barks of different kinds of trees was one of the duties of the women.

Legislative encouragement of textile manufacturing.— The



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A PAIR OF HAND COMBS

These implements, together with the spinning wheels and the loom shown in the next three pictures, were about the same as those in use throughout the colonial period. Hardly any improvement had been made upon them for two or three thousand years.

legislatures of many colonies early took measures to compel or encourage the making of yarn and cloth. In 1656 every family in Massachusetts was required by law to make at least three pounds of cotton or woolen yarn weekly for thirty weeks in the

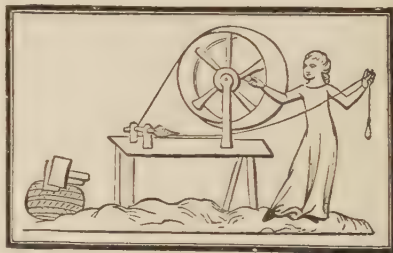


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HAND COMBING

year. To secure the raising of flax and hemp, bounties were paid in some colonies, compulsory measures were tried in others. Prizes were offered for excellence of cloth and for rapidity of production. The exportation of sheep, wool, and other raw materials used in the textile industries was forbidden in Massachusetts, Rhode Island, and Virginia. To protect the sheep, bounties were offered in Massachusetts and Virginia for the killing of wolves. In Philadelphia two or three fairs were held yearly, where the products of the loom and spindle were displayed. As the shipbuilding industry grew in the Northern colonies, particularly in New England, special inducements were offered for the production of sail duck.

The domestic system of textile manufacture. — By the end of the seventeenth century the greater part of the textiles was still made in the households, but another system of manufacture had grown up alongside the household method. Increasing wealth had created greater purchasing ability, the households had trained skilled workmen, and small capitals were being accumulated. We consequently find men going into the business of weaving for the domestic market. Even much earlier there



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Courtesy of Arlington Mills, Lawrence, Mass.

HAND SPINNING

were occasional examples of such enterprise in the more thickly populated centers. In 1643 skilled weavers from Yorkshire, England, had settled in Rowley, Massachusetts, and there had set up their looms and established a mill for fulling. Soon in many places in New England and the other Northern colonies similar enterprises were being established. In the large towns there were weavers with two or three journeymen and an apprentice or two who were making cloth for sale or on contract. Their method was either to buy yarn and weave cloth for sale, or to take in the yarn from others and make the cloth. The quality of the goods was usually not high, although once in a while a royal governor would anxiously testify that some of the cloth was of the best. The common homespun was worn by all the poor and many of the rich. Linsey-woolsey, a combination of woolen and linen threads, was a favorite textile.



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Courtesy of the Arlington Mills, Lawrence, Mass.

LADIES SPINNING AND WEAVING

British attitude toward colonial textile manufacture. — By the end of the seventeenth century the British government began seriously to take note of industry in the colonies. The Board of Trade was constantly asking the royal governors about it, and the replies of the latter were filled with recommendations for checking its further growth. By all European countries colonies were regarded as feeders of raw materials to, and buyers of finished articles from, the home country. No nation could endure the thought of rearing colonies only to have them become competitors in industry. The manufactures of the English colonies of the seventeenth century were too crude and primitive

to furnish real competition to the finer and more cheaply made goods of England. Nevertheless, when a governor could report, as one did, that three-fourths of all the textiles used in the colonies were homemade,¹ it was easy to see the foundations of future competition. Although most of the domestic manufactures were disposed of in markets near by, yet some textiles had begun to pass from one colony to another. In the interests of her own cloth manufacturers, therefore, England in 1699 passed



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a law prohibiting the exportation of any colonial woolen manufactures either to foreign markets or from colony to colony.

Textile manufacture at the end of the colonial period. — Nevertheless, the industry grew. Irish linen makers in 1719 set up their looms in Londonderry, New Hampshire, and in many other New England towns later on. The Germans in Germantown and elsewhere in Pennsylvania were also skillful linen makers. More and more establishments for the making of woolens, linens, and sail duck were set up in the larger towns like Boston and

¹ O'Callaghan, *Documents Relative to the Colonial History of New York*, V, 63.

Philadelphia. Spinning schools were established in Boston and New York. Contests in the textile arts were held in which the men and women from all the country round took part. In 1751 on Boston Common 300 women gave a spinning exhibition. Numberless small villages had fulling mills. In 1767 one country town in Massachusetts made 30,000 yards of cloth. In 1769 one person with child labor spun 36,680 skeins of fine worsted yarn, which would make up into 7320 yards of women's apparel. In spite of legal restraint the foundations of a great industry were being laid.

The manufactures of leather: *The tanneries.*—Beginning as strictly farm and household tasks, the making of leather, boots, and shoes passed through the household and domestic stages, until by the end of the colonial period there had developed specialized industries manufacturing for the trade.

Tanning in crude fashion was an industry easily established on account of the abundance of bark. In all the colonies it began nearly as soon as the people arrived. Leather dressers and tanners came over with the first shipload of immigrants to Virginia, and were soon making a living at their trade. In 1649 Captain Matthews was keeping eight shoemakers busy on the leather produced at his tannery. In New England and the Middle colonies hundreds of small local tanneries sprang up. In many cases they were merely an adjunct to agriculture. Often, however, the industry became specialized, and separated from the farm. In New York it was well established as such by 1660, the tanners, many of whom became well to do, occupying a section of the city by themselves.

Shoemaking.—Boots and shoes were made in almost every town from the start. Itinerant cobblers, like the weavers, and little shoemaking shops on the farm were to be found everywhere. Before the middle of the eighteenth century shoes were rarely made for the market, though they were often made to order. Prior to this time shoemakers seldom hired journeymen, but worked alone in their shops. From 1750 on, however, the shoe business expanded, and manufacturers began to make a few pairs

in advance of orders. At first the market was provided by the home town and towns in the vicinity, and then it was but a step to manufacturing for markets at a distance. Even as early as the end of the seventeenth century Lynn, Massachusetts, was noted for the excellence of its women's shoes. From here shoes were sometimes sent considerable distances. Manufacture for distant markets, however, had, as a rule, not progressed far in colonial days on account of the difficulties of communication and transportation.

Regulation of the leather industry by law. — The lawmakers passed acts for the regulation and encouragement of the industry. In 1662 an act of the legislature of Virginia required the establishment of a tannery in every county. Nearly all the colonies forbade the exportation of hides and leather. New England towns often granted lands and other special favors for the setting up of a tannery or a cobbler's shop in the community. The lawmakers of Massachusetts, Connecticut, and Rhode Island established uniform sizes, and provided for the inspection of leather before it should be made up.

Iron manufactures. — One of the greatest needs of the colonies was iron for the necessary utensils and tools. Importation was impossible on account of the settlers' inability to pay for the goods. Their first efforts, therefore, included attempts to produce iron and iron products. The capital required was large, however, and the industry thus differed from the early textile and shoe manufacture. Mining, refining, and foundering, consequently, were from the first separate from the farm and the household, and constituted specialized forms of industry. The forge, on the other hand, was a very common part of a farm's equipment, and the working of iron was one of the ordinary "chores" of the farmer.

Crude-iron production in the seventeenth century. — The earliest furnaces were set up on the James River in 1619, and were well on their way to success when an Indian attack, which carried off many of the settlers in 1622, also destroyed the works and put an end for the time to the industry there. In Massachusetts John

Winthrop and some English capitalists formed a corporation in 1643, and, after securing liberal land grants and other inducements from the General Court, set up a blast furnace at Lynn to smelt iron from bog ore. This was a poor kind of ore, and there was little of it, but it supplied the small establishments of those days. The same company afterwards set up another furnace at Braintree. Later on similar enterprises at Plymouth began to work the numerous bogs of the Cape. In 1734 furnaces were begun for working iron deposits found in the western part of Connecticut, and, as the ore was of a good quality, the most extensive works in New England grew up here. From these deposits, too, were drawn the ores which supplied the furnaces set up by Robert Livingston on his estate near the Hudson. In Orange County, New York, and its vicinity were also found good deposits of ore, and here some of the best iron manufactories of colonial days were established. One of these, the Sterling Iron Works, lasted well into the nineteenth century. In Pennsylvania, too, they began to find ore and make iron, this being one of the chief industries of the colony, although not in colonial days were the great ore fields of western Pennsylvania discovered and worked. Finally, early in the eighteenth century a new attempt was made in Virginia, and under the auspices of Governor Spotswood and other capitalists a rather extensive industry was built up.

Crude-iron production in the eighteenth century. — The first half of the eighteenth century saw a great increase in the number of iron works in the colonies. Hundreds of furnaces and forges were scattered throughout the length and breadth of the settled regions. Let us not, however, exaggerate the size of the industry. Probably one modern blast furnace has greater capacity than all the colonial works combined. The furnaces were small and the forges were often little more than the ordinary smith's forge. The colonial furnace varied from twelve to twenty feet in height and from six to eight feet in diameter.

Bloomeries. — A large part of the furnaces, probably a majority, were not strictly blast furnaces at all. They were rather

what are known as bloomeries. A true blast furnace liquefies the iron in the ore. The heat of the bloomery was not sufficient completely to fuse the iron. Instead, a pasty mass was formed which was taken out and beaten into an oblong shape called a "bloom." By repeated heatings and beatings the iron was partly refined and then shaped into bars. This was known as bar iron. Further than this in the refinement of iron the colonists rarely went. The making of steel was a long and difficult process, and was understood by but few. Its production was practically unknown in the colonies.

Methods of a large colonial iron works. — It took six weeks to heat a furnace to the smelting point. The blast was furnished by a pair of bellows run by water power. Charcoal was used as the fuel, one hundred and twenty bushels being required to produce one ton of pig iron. It was estimated that an area of not less than four square miles of forests was essential for an iron works of large size. Poor transportation facilities created problems for the industry. For best results the furnace had to be near ore, wood, and water. Even under the most favorable circumstances the ore usually had to be carted or carried on horseback for a mile or more. Afterward, the pig iron had to be transported for twenty or thirty miles to the nearest water transportation. The labor force required for an establishment that could produce eight hundred tons of pig iron a year was about one hundred and twenty men.

There were few works of such size in the colonies in the eighteenth century. For six years the average annual production of one of the larger establishments was three hundred and thirty-six tons. One modern furnace can produce five hundred to seven hundred tons of pig iron in a day.

Iron foundering and forging. — Most of the early manufactures were of cast iron. Pots, kettles, mill parts, hearths, cannon, and ball were cast in moulds. Cannon were cast solid and afterward bored out. Much forging was also done, oftentimes on the farms. Nails, for example, were pounded out on the anvil by the farmer and his sons. Gradually

heavier work was undertaken. Tilt hammers run by water power were set up in Boston, New York, and elsewhere. In such places anchors, cables, and other large pieces were forged. Rolling and slitting mills were also established between 1700 and 1765 in almost all the Northern colonies.

British policy toward colonial iron manufacture. — The iron manufacture, aside from the pig and bar iron, was entirely for home consumption. Crude iron was one of the few colonial manufactures that were exported to England in important quantities. It did not compete with British industries, but rather served as raw material for them. By 1750 the British iron industry had declined almost to the vanishing point, on account of the disappearance of the forests under the demands of the furnaces for charcoal. British law, therefore, encouraged the production in the colonies of pig and bar iron and their exportation to England duty free. But it was another matter when it came to the manufacture of articles made of iron. This threatened British interests with competition, and in 1750 the erection of slitting and rolling mills, tilt hammers, and steel furnaces was forbidden.

The iron industry and the Revolution. — The laws did not wholly stop the industry, however, and when the Revolution came on its widespread establishment proved the salvation of the colonials. The war, also, stimulated the industry still further. Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania became the sources of the munitions supply for the army. Connecticut had already begun, but now greatly increased, the manufacture of small arms. Rhode Island, Pennsylvania, and New Jersey furnished many cannon and ball. At the Sterling Iron Works in New York was forged the great chain, each link weighing one hundred and forty pounds, that was stretched across the Hudson to prevent the British fleet from going up the river.

Beaver hats. — The making of felt hats had reached notable proportions in New England and New York by the beginning of the eighteenth century. This industry was based on the

great supply of beaver. As it threatened to compete with the English hat makers, however, a law was passed forbidding the manufacture.

Flour and lumber. — Two other industries, the making of lumber and the grinding of grain, were early established. Both were necessary to the life of the colonists, and both started as farm and household occupations. At first lumber for the houses was hewed out with the axe — shingles, clapboards, framework, and flooring often being made in this way. Thus the farmer and his boys found another job for their winter days and evenings. Likewise grain was ground in hand mills, or cracked in hollowed-out blocks of wood.

Sawmills were set up, however, in most of the colonies nearly as soon as they were settled. At first power was supplied by horses or by the wind, but later swift-running streams were used. New Hampshire and Maine for a long time found lumbering their chief source of revenue. Piscataqua, now Kittery, Maine, became for a time one of the greatest lumber markets of the world, and the Maine rivers as far as the Kennebec were lined with sawmills and filled with logs floating their way downstream. Lumber for houses, clapboards, shingles, staves, beams, and hoops was exported in large quantities from Boston and Newport. The cutting of masts and other shipbuilding material also became a spirited industry, and was encouraged by bounties from the English government.

In the grinding of grain similar changes were made. The needs of the community soon resulted in small neighborhood mills everywhere throughout the colonies. By the end of the seventeenth century the surplus was great enough for export to Europe, the West Indies, and from colony to colony. From New York and Pennsylvania — the centers of the flouring industry — the exports were large. For a long time the bolting of flour for the whole province was by law a monopoly of the City of New York.

Summary of the characteristics of colonial manufactures. — From our brief survey of colonial industries we are enabled to

draw the following conclusions. We have seen, in the first place, that nearly all of them began as what may be called by-industries of the farm. The immediate needs of frontier life compelled practically everybody to start out as a farmer. That meant more than the raising of crops and animals. It meant preparing grain for food, building houses, making clothing, furniture, tools, and implements. Every community, both North and South, was compelled to become more or less self-sufficient, supplying most of its needs itself.

In the second place, we notice that colonial manufactures were of a crude sort. They were of the kind requiring the least expenditure of labor consistent with securing serviceable goods. This was to be expected from the multitude of duties of the individual colonist and from the fact that manufactures were intended for use and not for ornament. It was only when the increase of population and wealth made it apparent that manufacturing for the market offered chances for profit that more intensive labor, resulting in goods of finer quality, was expended.

A third characteristic of colonial manufactures was that for a long time they did not compete with the products of foreign make. Homespun, leather, pig and bar iron, lumber and shipbuilding material, pot and pearl ashes not only seldom competed with English goods, but were rather regarded as welcome raw material for further refinement. This explains the long immunity from restrictive laws which some of them enjoyed, as well as certain acts passed to encourage them. It was only when markets developed, when industries began to leave the household and the output became more refined, that certain colonial products threatened English interests and met with restrictive legislation.

Fourthly, we see a gradual specialization of industry — an almost imperceptible decline of the jack-at-all-trades. Certain occupations which had been merely farm chores became separate industries upon which men put all their time. We have seen this development in all the different colonial manufacturing activities. This must have been at the bottom of the alarm

shown by the eighteenth-century colonial governors in their reports. Specialization of industry had, to be sure, barely begun in colonial days. It took many years for manufacturing to leave the farm completely, but even agriculture itself finally subdivided into many separate parts. There are now, for example, farms exclusively for wheat, for fruit, for truckgarden-
ing, for milk, and for fine-bred cattle. The self-sufficient community gradually disappeared, until every individual became dependent for a thousand articles drawn from many different parts of the world.

Summary of the colonial period. — We have seen how religious and dynastic wars, wretched poverty, and generally stifling social and economic conditions in Europe had made many people ready to dare any danger, to take any chance, rather than to continue to endure the benumbing hardships of home. The opportunity for a change came when explorers, driven by the spirit of adventure and of trade, and in the pursuit of knowledge, discovered the ocean routes to the East — and America.

The dominating economic fact of the colonial period was the migration of the people of Europe for the purpose of establishing for themselves new homes in the wilderness. These migrations began when capital, assisted by the governments of England, Holland, Sweden, and France, became interested in the economic possibilities of the unsettled parts of the world, and created the great trading companies of the sixteenth and seventeenth centuries. For the establishment of their enterprises the migration of people was necessary, and for migrants they turned to the oppressed and poverty stricken of the home lands. The ventures of the companies, as well as of most of the individuals who undertook similar enterprises, were not financially successful, and soon private enterprise was superseded by government enterprise. As the whole continent east of the Mississippi and north of Florida eventually fell to England, the strip of coast east of the Appalachians was gradually occupied by the people under the auspices of the Empire.

For subsistence the colonists turned to the occupations

offered by the raw land. They fished, they built ships, they traded in furs, and they exploited the forests. With these raw materials and with the products of agriculture, they gradually built up a small trade across the seas, securing in this way some of the refinements of lands longer established. Handicapped as were the colonists by a lack of currency, by poor roads, and by an insufficient variety of products among the different sections, the commerce of the period remained to the end mainly ocean commerce. We therefore see, as the colonial period advances, a cleavage taking place between the people of the coast and those farther inland. The "culture" of the colonies was largely due to the wealth acquired by the traders of the coast towns and the tide-water plantations. By the end of the period the frontier and the frontiersman had reached the mountains and were looking westward. The "East" and the "West" had come into being.

If it was foreign trade and westward migration that created "East" and "West," it was differences in agriculture that made the "North" and the "South." Agriculture, like fishing and fur trading, was a necessary and universal industry in an undeveloped and isolated land. But agricultural methods and products varied greatly owing to differences in the soil, the climate, and the inclinations of the people. Hence arose the diversified agriculture of New England, the plantation from Maryland southward, and the "bread" colonies in between. Agricultural purpose varied widely, also, from the typically commercial agriculture of the Southern plantations to the self-sufficing agriculture of New England, with a combination of the two in the Middle colonies.

Agricultural technique and methods nowhere in the world were highly developed during the colonial era. Much less would we expect to find them developed in the wilderness and in the midst of abundant lands which needed only to be scratched to produce richly. The farmer's chief task, therefore, was to clear away the forests so that the land might be worked. His labors he performed with the rude tools that the world then pos-

sessed. Of animals he had but "common" breeds, and these he permitted to become still more common by lack of care.

Not until near the end of the colonial period was machinery introduced to the world; colonial manufacture followed the methods in vogue for many ages past. The crudity of method was accentuated here by the conditions of frontier life, and household manufacture was practiced everywhere. The main work of the colonists was to produce the raw materials which nature afforded. Hence, for the most part, manufacturing was but a secondary industry, carried on only to supply pressing needs. Yet, before colonial days ended, we find in the well-settled Eastern regions more and more concentration upon manufacturing for the trade, especially in such essential industries as the making of cloth and iron, and the production of flour and lumber.

The development of a great wilderness without the aid of machinery required labor in quantity. Brute strength, endurance, and adaptability rather than specialized skill were the chief requirements. The colonial labor problem was to get enough men and to hold them against the competition of the land. As a result, systems of enforced labor grew up alongside of free labor. In a large part of the colonies the bond servants, drawn from the unfortunates of Europe, and negro slaves did most of the work. The former, however, eventually becoming free, mingled without distinction with the rest of the population; the latter, together with their descendants, remained slaves. Among such conditions labor organization was impossible; nor was it needed, for the opportunities offered by the abundant resources of the new land kept the white labor market bare and thus rendered the bargaining position of the laborer strong without organization.

The economic life of the colonists was complicated by the attitude of England. Like all European countries, she looked upon colonies primarily as an institution for her own economic advantage, — as a source of raw materials which she needed, and as an enlarging market for the goods which she produced.

The uninhabited portions of the globe were to be used to make her position secure among the other nations of Europe; hence the long line of laws and regulations restricting, or encouraging, as the case might be, the activities of the colonists.

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QUESTIONS

1. Upon what did colonial manufacture depend?
2. In what respects were market conditions unfavorable for the growth of manufacturing in the colonies? What other occupations can you think of that would be more attractive to men with capital?
3. What were the chief natural advantages for manufacturing pos-

sessed by the colonists? What was chiefly responsible for the development of manufacturing in New England? What were the difficulties of securing capital for manufacturing? Will the presence of capital necessarily result in the growth of manufacturing, and will an apparent lack of capital necessarily result in a dearth of manufacturing?

4. What were the difficulties in the way of securing labor for manufacturing?

5. What were the leading articles of export with which the colonists paid for manufactures? Were there any other sources of income which helped?

6. What is meant by the "household" system of manufacturing? Why did this system become so thoroughly established in the colonies?

7. What is meant by the "domestic" system of manufacturing? Show how the development of this system indicated increasing specialization in industry.

8. What legislative encouragement was given manufacturing by the colonies? Was it wise to stimulate industries artificially?

9. Describe the development of the domestic system of textile manufacturing. Why did European nations oppose the development of manufacturing in their colonies? Could the colonies have competed effectively with English manufactures? What restrictions did England impose on colonial textile manufactures?

10. Show how far the textile industry had progressed by the end of the colonial period.

11. Why was the manufacture of leather one of the earliest of colonial manufacturing industries? Describe the expansion of the manufacture of boots and shoes. Where did this industry have its greatest development? What legal regulations of the industry were made?

12. In what respects did iron manufacturing differ from other colonial manufactures? Locate and describe the iron industries of the seventeenth century. What was the extent of the industry by the end of the colonial period? What was a bloomery? Describe the methods of a colonial pig-iron works. What were the principal articles of iron made in the colonies? In what respects did England encourage the colonial iron industry and in what respects did she attempt to curtail it? What effects did the Revolution have upon the industry?

13. Why could the colonists compete successfully with the English manufacturers in the making of hats?

14. Describe the earliest methods of making lumber and flour. What advances were made in the methods of production? Where was the market found for these commodities? Locate the leading centers of production of flour and lumber. In what way and why did England encourage the lumber industry?

15. Give a summary of the chief characteristics of manufacturing and manufactures in colonial days.

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that necessity is a greater stimulus to manufacturing than abundant natural resources.
2. Resolved that a jack-at-all-trades is better fitted for life than a specialist

PART II. TRANSITION FROM COLONIAL TO NATIONAL ECONOMIC LIFE

CHAPTER VII

FROM THE REVOLUTION TO THE CONSTITUTION

- The end of the Seven Years' War
- Colonial discontent
- The growth of a spirit of liberty in the colonies
- The new British colonial policy
 - The Sugar Act
 - The Quartering, Stamp, and Townshend acts
- Colonial opposition to the acts
- Final acts preceding the war
- Problems of the war
 - The lack of centralized authority
 - The problem of money
 - Manufactures
 - Labor
 - Transportation
- Economic conditions among the civilian population
- The westward movement
 - The Cumberland and Tennessee valleys
 - The Northwest
 - Importance of the occupation of the West
- The problems of peace
 - The weakness of the government
 - Foreign relations
 - Interstate jealousy
 - Social and economic disturbances
 - The Confederation a step toward the Constitution
- The Constitution and its adoption
 - Origin of the Convention
 - The compromises of the Constitution
 - Constitutional provisions
 - The struggle for ratification

The end of the Seven Years' War. — The year 1763 was an eventful one in American history. It brought to a conclusion the struggle that had begun seven years before as a European war, and that had ended as a contest between England and France for colonial supremacy. The victory of England established her power in Canada, the Mississippi Valley, and India. For over a century the development of the mercantilist policy and colonial economic growth had caused the government to keep closer and closer watch over the colonies. Of this the Navigation Acts, the acts restricting or encouraging manufactures, the gradual abrogation of colonial charters, and the establishment toward the close of the seventeenth century of the Board of Trade for closer supervision of the colonies, are sufficient evidence. The outcome of the Seven Years' War, however, meant that England's relations with her empire must be closer and more effective than ever before. Henceforth, it was determined, the various parts of the Empire must share the expense incurred by the mother country in their government and defense. England, therefore, attempted to tax the colonies, to enforce laws hitherto evaded, and to maintain an army in America for the purpose — as it was claimed — of defending the frontiers.

The new policy came at an unfortunate time. The colonists themselves were in no mood for additional outside interference. In the first place, a feeling of discontent and irritation had been brewing for a number of years; secondly, the past century had developed a marked spirit of liberty among all the colonies.

Colonial discontent. — Colonial discontent had numerous causes, and only a few of the more important may be mentioned here. Among them were the restrictive acts noted in the preceding section, and the abrogation of colonial charters. To these may be added an unceasing interference with colonial legislatures and especially the disallowance of laws passed by them.

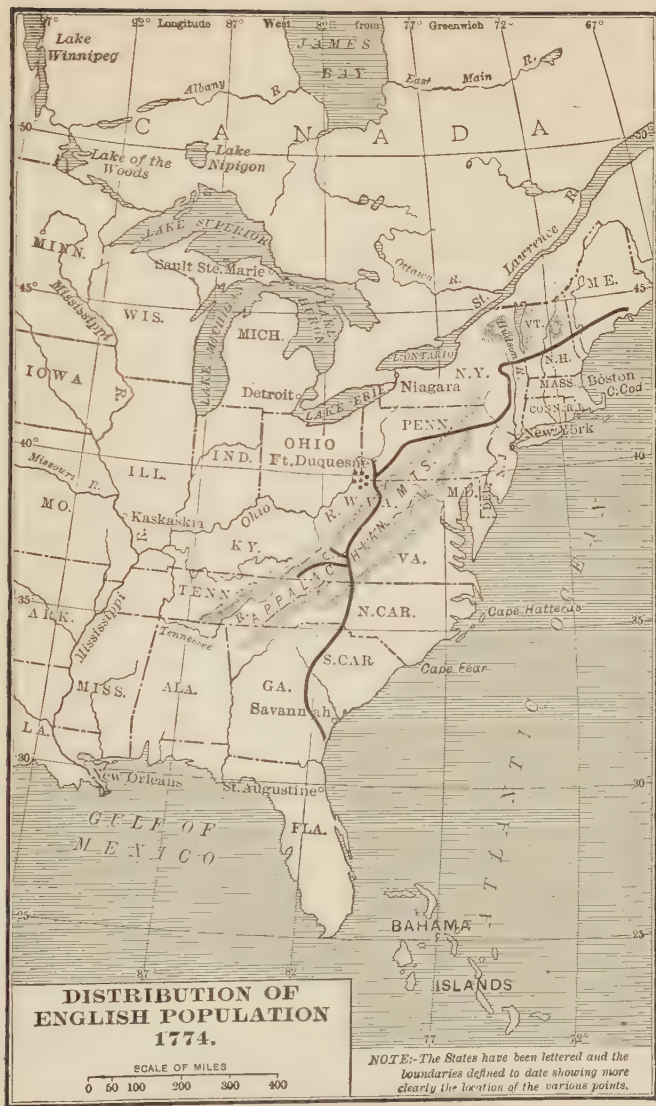
Discontent was growing also because the people were becoming crowded in the narrow strip between the mountains and the

sea. Restrictions on their economic freedom became, therefore, increasingly oppressive. Furthermore, a royal proclamation of 1763 forbade, for the present at any rate, any migration of the people to the regions beyond the mountains. And yet, it should be noted, up to 1763 the colonies had not thought of independence as a remedy.

The spirit of liberty. — The spirit of liberty grew up naturally out of the frontier. A frontiersman feels more independent than other people because he lives a long way from established authority, and, therefore, becomes used only to such regulations as he and his neighbors draw up. From established authority the colonies were three thousand miles distant at a time when ships moved slowly and there was no telegraph. Furthermore, the earliest colonies had been very much neglected by England because she was busy with her own political revolution at home.

The habit of doing much as they pleased was not lost by the colonists after the English government from 1660 on began its attempt to draw the reins more tightly. The restrictive laws, as we have seen, had been enforced poorly or not at all. The colonists often disregarded them. Especially true is this of the Navigation Acts, which would have prevented direct trade between the colonies and foreign countries. The Molasses Act also was almost a dead letter. In many ways which we cannot enumerate here, the colonists evaded or defied the will of the royal authority.

In the later colonies, too, a new frontier grew up — the population away from the rivers in the back country, along the foothills and in the valleys of the mountains. These people were looking westward. The prosperity of the older settlements along the coast depended upon the ocean and upon foreign markets to take the products of their industry and to supply their needs. Here in the mountains were a new people, already looking away from Europe, caring little for its markets, and gradually coming to believe in their ability to carve out an independent destiny.



The spirit of liberty was given new impetus also by the outcome of the Seven Years' War. As long as the French were in Canada and had their posts on the Great Lakes and in the Mississippi Valley, the colonists of the Eastern coast had always felt the need of England's powerful support. With the defeat of the French this constant threat was removed, and with it the colonists' dependence on England.

The new British colonial policy: *The Sugar Act.* — It was, therefore, just at a time when the restrictive laws on trade and industry were certain to be seriously resented by the colonists that England attempted to enforce them more strictly and passed others that were still more offensive. The Sugar Act, passed in 1764, was designed more as a revenue law than as one to protect the British West Indian planters, such as the Molasses Act had been. It laid duties on numerous articles imported by the colonies, but lowered greatly those on sugar and molasses imported from the West Indies other than the British. Steps were taken, however, for its strict enforcement. British war-ships, released from duty in French waters, were pressed into service as revenue cutters. The old days of easy smuggling and law evasion were ended. Writs of Assistance — general search warrants — denounced by James Otis as unconstitutional, were freely used by officers of the crown in their quest for smuggled goods.

Quartering Act, Stamp Act, and Townshend Acts. — In carrying out the decision to make the colonies pay for their defense, Parliament made provision for the partial support by the colonists of a small British army. Then followed a series of measures for taxation — the Stamp Act (1765) and the Townshend Acts (1767). The former attempted to compel the use of stamps on legal documents, newspapers, deeds, bonds, licenses, and many other instruments of like nature. The Townshend Acts provided for the collection of customs duties on certain colonial imports.

Opposition to the acts. — The enforcement of these acts raised storms of protest, and also resulted in the first steps to-

ward united action on the part of the colonies. A congress of representatives from nine colonies met in New York in 1765 to consider opposition to the Stamp Act. This was the forerunner of other assemblies that grew into the Congress under which the war was fought.

The most effective protests, however, were raised by merchants and importers. By them agreements were made not to import the manufactures of England or anything carried in English ships. These agreements were effective in compelling the repeal of the Stamp Act in 1766, and the Townshend Acts, excepting the notorious tax on tea, in 1770.

Final acts preceding the war. — By this time the passions of the colonists had become so aroused that they were ready to fight over the very question of England's right to tax them at all. On the other hand, the stubborn spirit of George III refused to be moved. Mob law often reigned, and acts of violence, such as the Boston Massacre (1770), the burning of the Gaspee (1772), and the Boston Tea Party (1773), took place. Parliament met these acts by measures having for their purpose the repression of the mobs by force — the so-called Intolerable Acts. On the part of the colonists, British acts of repression were followed by renewed nonimportation agreements, and by attempts at organization and union out of which came the Continental Congress of delegates from the several colonies.

Problems of the war. — As soon as the war began, many of the problems which had belonged to the British government were transferred to the sorely troubled and ineffective Continental Congress. There were, besides, many new ones incidental to a state of war. Chief among the tasks of Congress were the raising, equipping, and supporting of an army. It had to provide food, clothing, guns, and ammunition. It had, therefore, to raise money, encourage manufacturing, procure labor, and look out for transportation. To Congress, also, fell the task of securing foreign aid.

Lack of centralized authority. — It soon became evident that the Continental Congress would be no more successful in raising

funds by taxation than England had been. For a number of years Congress had no legal standing. Early steps were taken, therefore, to remedy this defect, and the Articles of Confederation, making Congress the executive head of the states, were drawn up. Lacking the necessary unanimous consent of the thirteen states for adoption, however, the articles did not go into effect until 1781. Hence, practically the whole war was fought by thirteen separate governments held together only by the attack of a common enemy, a confidence in Washington, and a common leader in Congress.

The problem of money. — Congress had to beg the state governments for funds. The states seldom responded in adequate measure. Nevertheless, soldiers must be paid and supplies bought. Congress, therefore, soon took to printing bills of credit, that is, paper money, for the redemption of which no time or place was set. The inevitable result followed. After the first year or two the paper money began to fall in value. The fall became more and more swift as the amount issued became greater. Over two hundred and forty million dollars' worth of notes was issued, although not all were in circulation at any one time, and at the end of the war they were practically worthless. Since the states also issued paper notes aggregating nearly as much as those issued by Congress, the depreciation of all was greatly hastened.

Congress also borrowed money. Throughout most of the war its agents were in Holland and France looking for gold. In this attempt they met with some success. What was secured from these sources was, at any rate, real money or supplies. Nobody had enough confidence in the new American power, however, to be very enthusiastic about lending it money. Nevertheless, in addition to the foreign debt, considerable loans were made at home, mostly in the shape of munitions or equipment of some sort.

One of the results of a defective currency may be seen in the sufferings of the American army. Poor transportation service, as we shall see, accounted for much cold and hunger among the

men, but paper money also played its part. Says Professor Van Tyne: "The want and starvation in the winter's camp at Valley Forge might seem to indicate famine in the surrounding country; but at Philadelphia, not a day's journey distant, the British had no difficulty in getting fresh provisions from all the country round. Howe paid gold for supplies, while Washington paid paper, and it was a hardy patriot who was blind to the difference." ¹

Manufactures. — For the first two years of the war importations were nearly all shut off. Those from England were entirely stopped, and it took some time to establish trade with other countries. This condition of affairs stimulated home manufactures, especially those of iron and cloth. Along the Hudson River and in eastern Pennsylvania the iron furnaces and forges were, before the end of the war, supplying all the needs of the army and most of the needs of the civilian population. Spinning and weaving everywhere were stimulated. As privateering developed, the making of sail duck became of greater and greater importance, especially in New England.

Labor. — One great drawback to industry was the scarcity of labor. Many were in the army, many others were indifferent, or hostile, to the American cause. The British carried off large numbers of negroes, and many white men, loyal to the mother country, had fled.

Transportation. — One of the worst problems of the war was the question of transportation. Most of the trade between the colonies had hitherto been carried on by sea. The British, however, early possessed themselves of the ports of Philadelphia and New York. Their warships, moreover, rendered dangerous, although they did not entirely stop, all traffic by the sea. As a practical means of interstate transportation, the sea was lost to the Americans. The armies often nearly starved or froze to death, because there were few good roads. There never was a time during the war when there was not an abundance to eat and probably to wear. Yet, in the midst of plenty, Washington

¹ *American Revolution*, 244.

almost lost his army on more than one occasion owing to the difficulty of moving supplies.

Economic conditions among the civilian population. — While the army suffered, most people got on very well. During the first year or two European goods were shut off. The enterprising Yankee shipbuilders and owners did not long allow their property to lie idle, however. Soon they were out privateering, or were slipping through the British navy after foreign cargoes. Great profits were the rewards of success, and numerous fortunes were made by the privateersmen during the war. By the end of the second year a brisk trade had been put in operation with French, Spanish, Dutch, and other European ports in spite of the British navy. A great many vessels, of course, were captured, but many others got through. After the French joined in the struggle, American shipping had the aid of their navy. It came about, therefore, that the stores of the towns and cities along the coast were often well stocked with a variety of foreign goods.

Upon the greater part of the country the war hardly made a mark. The only regions where the normal activities were impossible were in the immediate vicinity of the campaigning armies. After the first year the New England farmers went on about their wonted occupations. Those living near the southern shores often found better customers than usual in the sailors of the French navy. During the first four or five years the events of the struggle were often unheard of in the Carolinas and Georgia until months after they had taken place. In 1780 and 1781 the Southern sections, on the other hand, were bearing the full measure of invasion and the consequent destruction.

The cities where the British were in occupation — New York and Philadelphia — prospered from the trade of the soldiery. Patriotic zeal did not prevent trading with the British during the Revolution any more than it had prevented trade with the French in the Seven Years' War. Many vessels from various colonial ports sailed with their cargoes into the harbors of New York and Philadelphia while these cities were in the hands of

the British. Twenty-four million pounds of tobacco reached England during the years 1777 to 1780.

The westward movement: *The Cumberland and Tennessee valleys.* — While the quarrels and the fighting along the seaboard were taking place, events of equal importance were occurring, almost unheralded, beyond the mountains. We have already noted (p. 22) the settlements of common people crowded along the foothills all the way from Pennsylvania southward. It was during the years of the Revolutionary period that these folk began to make their way through the mountain passes into the lands beyond.

Twenty-five years or more before the war began, small settlements had been made along the numerous sources of the Tennessee River. From here Daniel Boone had in 1769 begun his explorations of the Western regions. A few years later a group of Virginia and North Carolina capitalists had formed a company for the purpose of speculating in Western lands, and in 1775 all of Kentucky was purchased from the Indians, without sanction from the Virginia government and contrary to the proclamation of 1763 (p. 94). The company employed Boone to build a road leading through Cumberland Gap on the Virginia-North Carolina line into the heart of its purchase. Although people had begun to make settlements in the interior of Kentucky and Tennessee before this time, the construction of the Wilderness Road was followed by a more rapid migration, and by the end of the Revolution the territory south of the Ohio was already in the hands of actual settlers.

The Northwest. — North of the Ohio the English authorities stirred up the Indians and set them on the settlers to the south. In the far western Indiana and Illinois country about the only whites were a few French in some small villages — the remnant of the French Empire. At his own request George Rogers Clark, a Virginia surveyor, had been commissioned by Virginia to establish the authority of the state over all this region. With a few volunteers Clark floated down the Ohio in 1778, seized the French villages, and the next year captured Vincennes along

with its British garrison and commander, who had come down from Detroit for the purpose of destroying Clark.

Importance of the occupation of the West. — Too much importance can scarcely be given to the occupation of the Tennessee and Kentucky country and the seizure of the Northwest. When negotiations for peace began, the able American diplomats at Paris were supported in their demand for the Mississippi as the western boundary by the strongest arguments that could have been given — the arguments of possession and actual settlement. The battles of Washington and his soldiers in the East had won independence; the spread of the common people along the Tennessee and the Cumberland, and the vigilance and leadership of George Rogers Clark had won an empire.

The problems of peace: *The weakness of the government.* — When the war ended the American states faced conditions even more dangerous than those of war, and infinitely more difficult than those which they had undergone as colonies of Great Britain. Congress still possessed no real power, although it had a legal standing after the adoption of the Articles of Confederation in 1781. But while the Articles created a Congress, they failed to give it adequate authority. It consisted of delegates from the states, each delegation having one vote. It could vote to raise and equip armies, build navies, direct wars, make treaties, and do other things which are usually associated with sovereign power. It lacked, however, the power to enforce its decrees. It was at the mercy of the individual states. If Congress voted money, it must turn to the states to raise it. If a treaty with a foreign power was made, it was respected only in such states as condescended to be bound by it. In its inability to raise money was to be found the essential weakness of Congress. Without that power no decision that it might make could with certainty be carried out. To make matters worse, amendments to the Articles required the unanimous consent of the states. On two occasions attempts to amend them so as to give Congress the power to levy customs dues were defeated, in each case by the vote of one state.

Foreign relations. — Independence had transferred from the British to the American government the responsibility of adjusting relations with foreign nations. The American government, to its dismay, found that England had become a foreign state, and one that was not too friendly. The Navigation Acts now applied to Americans as foreigners, and they found that these laws restricted their trade in a far more aggravated form than had been the case while they were the colonies of the Empire. England also shut our vessels out of the West India trade, and that with the French and Spanish islands was also restricted. In direct trade with England, charges and duties were laid on American ships and their cargoes far greater than those levied against the ships and goods of other countries. This was done partly out of spite, partly in the hope that the states would drift back to their allegiance, and partly on account of the fear that the better and more cheaply built American ships would displace the British merchant marine. When John Adams, Minister to England, hinted at retaliation by Congress against British trade, his words caused only cynical amusement, for the British well knew that Congress had no power to do anything of the kind. Although it was impossible to come to any agreement with England, a commercial treaty had been made with France during the war, and others were made with Holland, Prussia, and Sweden soon after the close of the struggle.

It became more and more difficult to borrow money from anyone. Foreigners had become, naturally enough, afraid to lend to a government that could not tax. Even the interest on European loans was not paid. Between 1781 and 1788 Congress had called upon the states for some fifteen million dollars, but of this sum only three million five hundred thousand dollars had been paid in actual money.

Interstate jealousy. — The government, powerless abroad, was even more helpless at home. The sovereign states were constantly quarreling and wrangling with one another. Independence had brought with it the problem of securing harmony among these units, a responsibility that had formerly belonged

to the English government. It was, indeed, due to interstate rivalries and jealousies that the Articles of Confederation failed to provide for a strong central government. None of the states desired such a government in the beginning. They remembered the English rule and did not propose themselves to establish one which might exercise the same kind of tyranny. Secondly, the lack of transportation and communication had bred ignorance and narrow views of the outside world. Each state was suspicious of the good faith of every other. State hated state, and armed clashes between certain of them were often imminent. The spirit of the times is well shown in the will of Lewis Morris of New Jersey, in which he provides for the best education obtainable for his son except that it must be secured outside of Connecticut, lest he imbibe "that lowe craft and cunning so incident to the people of that country." ¹

Since united action was impossible under the circumstances, each state took action for itself. In attempted retaliation against British discrimination, certain states passed laws aimed at excluding British goods or ships. Such laws being passed by Massachusetts, Rhode Island, and New York, Connecticut saw its opportunity and opened wide its gates to British merchandise. This action, in turn, led to the erection by different states of tariff walls against Connecticut. Virginia and Maryland nearly came to blows over the control of the Potomac River, the whole of which was included in Maryland's domain. West of the Alleghenies people were forming new communities and new states. Because of their isolation the Western peoples threatened to declare their own independence. Their anger was great because Congress was unable to secure for them from Spain free navigation of the Mississippi River.

Social and economic disturbances. — Among many of the people the period of readjustment after the war was keenly felt. The war had acted as a high protective tariff and had stimulated industrial activity. With its end English manufactures poured in and overwhelmed the little industries

¹ Channing, *History of the United States*, III, 468

created under the stress of war. Moreover, the inrush of foreign goods made a heavier and heavier condition of indebtedness among the population, because the imports very greatly exceeded the exports. Many people, too, during the war time of high prices and industrial activity, had gone into debt. This was especially true of the rural districts of the interior. When the war closed prices fell, so that farm produce went but a short way in payment of debts made while prices were high. Among all the debtor classes a bitterness of feeling bordering upon revolt became daily more intense.

The discontent of the people was manifest in the demand that paper money be issued and that creditors be forced to accept it in payment. Many states yielded to these demands, refusing to learn from the experiences with colonial and Revolutionary paper. Rhode Island went further, perhaps, than any other state. The farmers controlled the legislature and passed a law making it a penal offense to refuse to sell real goods for bogus money. Under this law a famous case arose in which a butcher who refused to exchange his meat for paper secured a favorable verdict from the judges. This case is notable as being the first in which an act of a legislature was overthrown by a court.

During 1786 and 1787 occurred a number of disturbances due to the hard times. They took place in many states, but those in various parts of New England, especially in Massachusetts, have come to be known as Shays's Rebellion, after the name of the leader of a group of malcontents in the western part of the state. The objective of the rioters was the elimination of lawyers and courts, the agencies through which the payment of debts was enforced. Little came of these outbursts. They were important, however, as showing the spirit of a large part of the population.

The Confederation a step toward the Constitution. — The years of humiliation, of interstate wrangling, and of general hard times were also years of education. They served their purpose in demonstrating the need of a strong central government.

Gradually, more and more people, who, on account of their feeling toward the English authorities, had regarded such an establishment with dread and suspicion, came to realize that there are worse things than a strong government. Among the possibilities thus to be dreaded were disunion, civil war, and anarchy. The period of the Confederation was necessary before the American people could be brought to the point of accepting the Constitution. In no better way could they have been taught that economic peace and progress can come only through stable institutions, and that even a government by the people must be a strong government, if it is to live.

The Constitution and its adoption: *Origin of the Convention.* — Difficulties between Maryland and Virginia started the chain of events which resulted in the calling of the Constitutional Convention. The trouble arose over the navigation of the Potomac, and of Chesapeake Bay, the entrance to which was controlled by Virginia. In 1785 at a meeting of commissioners from these two states to settle their differences, it was proposed to assemble during the following year a large convention of the states bordering on Chesapeake Bay to settle various disputes which had arisen among them. At this meeting, held in Annapolis, nothing was done as originally intended, but a call was issued to all the states to send delegates to a convention for revising the Articles of Confederation. This call resulted in the Constitutional Convention, which met in Philadelphia in 1787.

The compromises. — It is not our purpose to discuss in detail the difficulties of creating a constitution acceptable to all. It is enough to say that the Convention almost at once divided on certain questions, and that these divisions made necessary numerous compromises in order to come to an agreement. There was first a division between large and small states over the question of representation in the proposed legislative body, the small states demanding equal representation with the large, while the latter desired a representation based on population. The matter was settled by the creation of a Congress of two

houses, one chosen according to population, and the other representing each state equally.

Differences between the North and the South also arose. One of these questions was in regard to the counting of slaves in deciding the number of representatives from a given state. The other had to do with the regulation of commerce by Congress. The first of these questions was compromised by counting five slaves as equaling three whites in determining representation and the amount of direct taxes, which Congress was permitted to levy only in proportion to population. The dispute over the control of commerce by Congress arose from the fear among the Southerners that this power, if granted, would result in the prohibition of the importation of slaves. The matter was settled by giving Congress the power to regulate commerce with foreign nations, among the several states, and with the Indian tribes, but forbidding any interference with the importation of slaves before the year 1808.

Constitutional provisions. — That the framers of the Constitution had learned well the lessons taught by the weaknesses of the Articles of Confederation and by the disorders which followed, is shown by the Constitution itself. It provided for a Congress with power to legislate, an executive, and a judiciary to interpret and carry out the laws. Congress was given the power to tax, thus curing one of the greatest evils of the old government. Through the control of foreign commerce it was given the power to retaliate upon foreign nations which discriminated against American commerce and shipping. From the states was taken the power to levy impost duties. The mint was placed in the hands of Congress, and states were forbidden to make anything but gold and silver legal tender in payment of debt. In the federal courts an agency was created by which all differences between states should be settled. Finally, Congress was authorized "to pass all laws necessary and proper for carrying into effect" any of the powers which had been placed in its hands. This was one of the most important of all the clauses in the Constitution, and under it Congress has legislated

in many ways and on many subjects which were not specifically mentioned in the fundamental law.

The struggle for ratification. — During the campaign for ratification of the proposed Constitution in the different states, it was subjected to the most bitter denunciation and to the extreme of ridicule. On the whole the people divided along the line of property. The merchants, the manufacturers, and the creditors of the states and of the nation generally favored ratification. To all such, a government able to pay its debts, to encourage and protect manufactures, and to maintain peace and order at home was a boon greatly to be desired. As we have seen, however (p. 105), there were a great many debtors who were quite ready to evade the payment of their debts, or who wished to pay them in depreciated money. To such, a strong government that could tax and that could enforce the payment by debtors of their obligations was obnoxious. As a matter of fact, therefore, ratification of the Constitution was extremely difficult to secure. Probably a good-sized majority of the people were at first opposed to it. Some years after its adoption John Marshall, one of the greatest of American judges, stated that "it is scarcely to be doubted that in some of the adopting states a majority of the people were in opposition."¹ That it was adopted at all is, perhaps, due first to the fact that the people never voted on the Constitution itself, but only for delegates to the ratifying conventions. Many conventions met with large majorities in opposition, but were finally induced by arguments, or other means, to ratify. In the second place, it has been estimated that not over five per cent of the people voted in the elections for delegates. Those who voted most freely lived in the cities where voting was easy and where most of the population had economic reasons for favoring adoption. At that time, moreover, all the states had a property qualification for voting. Hence, a large number who would naturally have opposed the adoption were disfranchised entirely.

The supporters of the new Constitution had the advantage

¹ *Works*, II. 127.

over its opponents of the leadership of most of the ablest men of the states; its proponents were better organized; and they knew what they wanted. Hamilton, Madison, and one or two others contributed a number of articles, which, taken together, were called the *Federalist*. They are still one of the best presentations of the powers and limitations of the Constitution. In spite of all opposition, therefore, the states, beginning with Delaware, one by one voted to ratify. By August, 1788, all except North Carolina and Rhode Island had come into the fold. These two followed in 1789 and 1790, and the new government was finally on its way.

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QUESTIONS

1. What were the effects of the Seven Years' War (1) on the colonial policies of England, (2) on the attitude of the colonists? What influences were causing discontent and a desire for greater independence in the colonies?

2. Describe the provisions and purposes of the Sugar Act. How was it enforced? What were the Quartering, Stamp, and Townshend acts? What effects did they have upon the colonists? Tell of the final acts before the beginning of the war.

3. What problems did Congress face during the war? What was the weakness of Congress, and what attempt was made to remedy this weakness? What were the influences tending to hold the colonies together?

4. How was money secured for the expenses of the war? What were the extent and results of paper-money issues? Describe the efforts of Congress and the states to borrow money.

5. What effects did the war have on manufacturing? Show why the stimulus to industry arising from war is unsound. What was the labor situation during the war? Describe the difficulties of transportation, and show how they endangered the American cause.

6. How were the activities of the ordinary civilian affected by the war? Did the war create any unusual opportunities for acquiring wealth?

7. Describe the events taking place in the West during the war. What was the importance of these events?

8. In what particulars did the Articles of Confederation fail to create an efficient government?

9. In what ways did independence affect foreign relations? What discriminations did England make against American trade? Why could Congress not retaliate? With what states were commercial treaties made? What was the situation as to borrowing money?

10. In what way had the experiences with England influenced the states when they adopted the Articles of Confederation? What was the general attitude of the states toward one another? In what ways did the separate states attempt to meet British discriminations? Why did these attempts fail? What other influences toward disunion were at work?

11. What economic difficulties were experienced after the war? What gave rise to the demand for paper money? Describe the disturbances which took place. Is there greater danger from mob tyranny in democ-

racies than in other forms of government? What are the best ways of meeting such dangers?

12. Of what service had the experiences under the Articles been to the people? Is a strong government essential to economic prosperity?

13. What constitutional provisions show that the framers had learned a lesson from the Articles of Confederation?

14. Along what lines did the people divide when it came to the adoption of the Constitution? What were the arguments of each side? Is there any significance in the geographical location of those who were for and those who were against the adoption? What is the *Federalist*? The adoption of the Constitution has been called a triumph of the reign of law. Explain what this means.

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the American colonies were more advantageously situated than were the American states under the Articles of Confederation.

2. Resolved that England was justified in attempting to make the colonists pay for their own defense.

3. Resolved that debtors who contract their debts when money is cheap should be permitted to pay their debts with cheap money.

CHAPTER VIII

NATIONAL BEGINNINGS: CURRENCY, FINANCE, AND FOREIGN TRADE, 1789-1812

- Financial situation faced by the new government
- The first federal taxes
- The establishment of a Treasury Department
- The problems of the national debt
 - The foreign debt
 - The domestic debt
 - The assumption of state debts
 - The funding act
 - History of the national debt
 - Effects of the War of 1812
- The establishment of a currency
- Early banking
 - The United States Bank
 - The beginnings of political parties
 - The bank charter
 - Operations of the United States Bank
 - State banks
 - Rechartering of the United States Bank
- Foreign commerce after the Revolution
 - Early difficulties
 - Renewal of shipping activity
 - Laws in aid of American shipping
 - European wars and American shipping and commerce
- The struggle for the freedom of the seas
 - The "Rule of 1756"
 - The Jay treaty
 - The United States and the French Republic
 - Orders in Council and Decrees
 - Embargo and Nonintercourse acts

Financial situation faced by the new government. — We have, in the preceding chapter, seen to what a low estate the

credit of the nation had fallen during the periods of the Revolution and the Confederation. This was caused mainly by the inability of Congress to compel the payment of taxes of any kind. Congress had been forced, therefore, in order to meet expenses, to rely upon the good will of the states to furnish it with funds, upon borrowing money from abroad or from American citizens, and, finally, upon increasing amounts of bills of credit. The result was that for six years before the adoption of the Constitution the government had failed to pay the interest on the national debt, and for two years the principal as well, when it came due. In the meantime the paper money which had been issued fell so greatly in value that it had finally ceased to circulate as a medium at all.

The first federal taxes. — The first Congress in 1789 at once attacked the problem of revenues. The new Constitution gave Congress the sole authority to levy customs duties and excises, and also the power, under certain conditions, to lay direct taxes as well (p. 107). A law was first passed levying duties on imports. It provided for an *ad valorem* duty ranging from five to fifteen per cent, and for specific duties on about thirty articles. A few years later the minimum *ad valorem* rate was made seven and one-half per cent. Between 1791 and 1794 excise duties were also laid on the distillation of rum and whiskey, the manufacture of carriages and snuff, the refining of sugar, and upon auction sales. The first direct tax was laid in 1798. In this manner two million dollars were to be raised, the sum being apportioned among the several states according to the population of each, as the Constitution provided. This form of taxation was never resorted to again, although direct taxes of a different nature were laid on a few occasions when the needs were great.

Treasury Department. — For managing the revenues, estimating expenditures, collecting dues, and paying bills, a Treasury Department was established in 1789. This was placed in charge of a secretary appointed by the President. Washington chose Alexander Hamilton for the place. Hamilton was an

able financier, and much credit is due him for creating a sound financial system out of the existing disorder.

The national debt. — One of the first problems which Hamilton attacked was the national debt. There early arose strong opposition to the payment by the nation of all its bills. Our obligations consisted of three groups: (1) the national debt to foreigners, (2) the national debt to Americans, and (3) the debts of the states. Hamilton maintained that the national government should pay all three in full.

The foreign debt. — On the question of the foreign debt few disagreed with Hamilton. All felt that credit with foreign nations should be secured. This debt amounted in principal and unpaid interest to nearly twelve million dollars, and Congress voted its payment.

The domestic debt. — A most bitter quarrel arose over the payment of the domestic debt. There were to be considered in the first place the bills of credit. These, as we have seen, had become worthless, the last valuation set on them by Congress being at the rate of a dollar specie for one hundred dollars in bills. There had been issued in all over two hundred and forty-one million dollars, the greater share of which had been lost, destroyed, or redeemed.

In the second place there were the certificates, or bonds, which Congress had issued to those who had lent money or advanced supplies. These, including principal and interest, amounted to somewhat over forty-two million dollars. Some of them had circulated as money, and others had been sold by the original holders. All had depreciated greatly in value.

When it became probable that the Constitution would be adopted, speculators began to buy up the certificates. Then it leaked out that Hamilton was to recommend their payment at face value. Many charged the Secretary and others close to the government with imparting the information to their friends for speculative purposes. There is no doubt that a great scramble for the certificates took place. A writer of 1790 noted the symptoms in the following words: "An extraordinary rise of

certificates has been remarked for some time past. This could not be accounted for, neither in Philadelphia or elsewhere. But the report from the treasury explained all.”¹

It was, in part, this speculation that caused the opposition to the payment of the domestic debt in full. The original holders, who had given full value for the certificates, were, to a large extent, not the present holders. Many felt that to pay full value would but help along the game of a few who were maneuvering to secure without risk profits at the expense of those who had made patriotic sacrifices during the war. Unfortunately, there is some ground for the belief that this claim was true. To trace back a certificate to the original owner, however, was too great a task to be undertaken. While admitting that wrong would be done to a few, Hamilton held that the credit of the nation could be made sound only by the payment of debts in full, and this view finally prevailed. Accordingly, the certificates and a small amount of the paper money were redeemed at face value. The oldest bills of credit, however, were redeemed only at a valuation of one hundred to one. At any rate, as we have seen, but few of these were in existence.

Assumption of state debts. — During the Revolution and immediately afterward, the states had borrowed largely. Many thought that the national government should pay these debts, too, as they had been incurred for the general welfare. To this proposal there arose vigorous opposition, a large part of which came from the South, where some of the debts had already been paid by the states. The matter was finally settled by a bargain in which Southern members agreed to support the measure in return for Northern support for locating the national capitol in the South.

Funding act. — Agreement having been finally reached, Congress passed a funding act in August, 1790. This means that the President, through the Treasury Department, was authorized to issue new government certificates sufficient to cover the whole debt. Part of these were issued in return for a

¹ Macley, William, *Journal*, 150.

loan of twelve million dollars to cover the foreign debt. The rest were exchanged for the old national and state certificates. Whoever had any of these could, by sending them in, receive new certificates in which the government pledged itself to pay an amount equal to that named in the old ones, plus accrued interest. The rate of interest on the certificates averaged somewhat lower than that of the old ones.

History of the national debt to 1812. -- In 1793, the time when the funding of the debt had been completed, the whole amounted to over eighty million dollars. For its payment the national revenues, including those from the sale of public lands, were pledged, but no progress was made in its reduction until after 1805. That it was not greatly increased was due principally to an unexpected growth of the customs revenue. The foreign commerce of these years was very lively because of the European wars, and after 1793 the receipts from the customs rapidly increased, rising from four million two hundred and fifty-five thousand dollars in 1791, to over sixteen million dollars in 1808. In this way the government was enabled to meet extraordinary expenses occasioned by military preparation for war with France, for bribing and fighting Tripolitan pirates, and for the purchase of Louisiana.

When the Republicans triumphed over the Federalists in the election of Jefferson, they adopted the policy of debt payment. The army was reduced, and the building of ships for the navy was stopped. Aided until 1808 by large tariff revenues, they were enabled to accomplish their purpose, and by 1812 had brought the debt down to slightly over forty-five million dollars.

Effects of the War of 1812. -- With the beginning of the War of 1812, imports, of course, practically ceased, and the revenue from the customs fell in spite of a doubling of the rates of duty. Other taxes also proving inadequate, the government fell back upon paper money and loans. Consequently, by 1816 the debt had increased by over eighty-two million dollars. It was incurred, moreover, under great disadvantages, as is generally the case in time of war. The credit of the nation again fell, so

that lenders demanded high rates of interest, while at the same time they received discounts from the government on their loans. For example, one loan of seven million five hundred thousand dollars was secured at eighty-eight and twenty-five hundredths per cent. This meant that for every hundred dollars of debt contracted, the government received but eighty-eight dollars and twenty-five cents. Other loans were discounted at still greater losses. In addition, treasury notes — a form of paper money — were issued in large amounts at depreciated values. These afterwards had to be redeemed at par. In spite of the good beginning which it had made in the payment of its first debt, therefore, the nation had to make a new start in order to pay for its second war.

Establishment of a currency. — The metallic currency of the colonies was almost wholly English, French, Portuguese, and Spanish, because most of their trade was with those countries or their colonies. After the Revolution these coins continued in use for a long time. The Spanish silver dollar was legal tender in the United States until 1857. Values were generally figured in shillings and pounds, but were paid in any currency available. This state of affairs led to great confusion, as different values were assigned to the coins by the several states.

In 1791 Hamilton made a report on this subject, and the next year Congress established a system of coinage. The unit was to be the dollar, of a value as near as possible to that of the Spanish milled dollar. The coins were to be of both gold and silver, the dollar to consist of 371.25 grains of pure silver, or of 24.75 grains of pure gold — a ratio of fifteen to one being thus established between the two metals. Gold was to be coined in twenty-, ten-, and five-dollar pieces. One-dollar pieces were to be of silver. Small coins of less than one dollar were provided for, to consist of a given number of cents, that is, hundredths of a dollar.

Early banking: *The United States Bank.* — The first banking institution was the Bank of North America, organized in Philadelphia in 1781, and its chief purpose was to assist Con-

gress in its financial needs. The charter of the bank and most of its capital were furnished by the government. At the close of the war the relations between the two ceased, a new charter was secured from the state of Pennsylvania, and the institution continued as a private bank.

Hamilton's plans for the establishment of the credit of the nation included the chartering of a bank by Congress. He believed this to be the best agency for receiving taxes and keeping government deposits until needed. Through it as agent the government could also pay its bills, transmit its funds from place to place, and negotiate loans.

The beginnings of political parties. — Over this plan there arose a storm of debate, Hamilton leading one side and Jefferson and Madison the other. Jefferson opposed the bank because he believed that it would become an undemocratic monopoly which would result in a concentration of money power. The main line of attack, however, was on the ground that the Constitution did not grant to Congress the power to charter a corporation. Two parties emerged from this quarrel — the Federalist and the Republican. The division was roughly along the lines of those who had favored and those who had opposed the adoption of the Constitution, although Madison had stoutly supported and Jefferson had not opposed the ratification.

The Federalist party was in large measure composed of those who were described by John Adams as "the rich, the well born, the able." They were strongest in the wealthier districts of the Northern states, and favored an interpretation of the Constitution which would permit of great freedom of action on the part of the government. The Republicans, on the other hand, hated a strong government as they had hated a king. They feared an autocracy of the rich. In consequence, they wished a government strictly hemmed in by the letter of the Constitution. In general, they appealed most effectively to the South, to farmers, and to those in the interior away from the commercial influences of the coast.

The bank charter. — In spite of powerful opposition, Hamilton

succeeded in winning the support of Washington and Congress, and the bank charter was granted in 1791. The capital of the bank was to be ten million dollars, the government subscribing two million dollars. The rest was to be supplied by private individuals — one-fourth in specie and three-fourths in government certificates bearing six per cent interest. The charter was limited to twenty years' duration, and Congress promised to grant no other during that time. The central bank was opened at Philadelphia in 1791, and eight branches were established in the principal towns.

Operations of the United States Bank. — In its relations with the government the bank came up to expectations. It often made loans to the government. In collecting and paying out public revenue it served well. Its enemies, however, after 1800 reënforced by many state banks, attacked it as an unconstitutional servant of autocracy. That Englishmen held most of its stock also offered a talking point. In 1811, therefore, when the question of renewing the charter came up, the opposition proved too strong, and the renewal was refused.

State banks. — Before the adoption of the Constitution there were three state banks in existence — the Massachusetts, the New York, and the Pennsylvania bank which succeeded the Bank of North America. During the decades 1790 to 1810 there was a considerable increase in the number. In 1811 there were eighty-eight in all.

The banks of some of the Eastern states were established on sound principles. Those in Massachusetts and New York early adopted the policy of having sufficient assets to meet the demands on their issues of notes. In 1809 Massachusetts passed a law requiring banks to redeem their notes on demand, or suffer a penalty of two per cent a month. Later, the Bank of Massachusetts evolved a scheme by which all New England institutions were forced to redeem their notes in specie. Most of the Northeastern states had gone through their period of unsound finance and took measures to conserve their accumulating capital.

After the end of the United States Bank, there was a rapid growth in the number of banks chartered by the states. The increase in the Western and Southern states was especially rapid. In these states the banking regulations were generally slack, and, where the laws were good, their enforcement was defective. Such conditions were natural to the frontier. Capital was in demand to develop the raw new country. States and people were in debt. Easy banking laws, therefore, were designed to produce easy money — the substitute of the frontier for capital. While the frontier was still east of the mountains, we have seen the colonies, and then the states, supplying the people with easy capital in the form of issues of paper money. As the Constitution forbade the states to issue money, state banks on the Western frontier took over this function by issuing floods of bank notes with little or no specie in reserve. Such money was easy to lend, and consequently the banks were not particular to scrutinize very carefully the security which the borrowers might offer.

State banks during the War of 1812 served the government as the United States Bank had before. There was also a large increase in the number, over one hundred new ones being established during the four years from 1811 to 1815. The large amounts of paper money added by the banks to that which was already in circulation caused a general suspicion of this medium, and people began to hoard specie when they could get it. The result was that little else but paper was seen in circulation. This condition was made worse by the suspension of specie payments by the banks in 1814.

Rechartering of the United States Bank. — After the war, therefore, the friends of the United States Bank were enabled to present strong arguments in favor of a centralized regulation of the currency system, and in 1816 a charter for a second United States Bank was procured to run for twenty years.

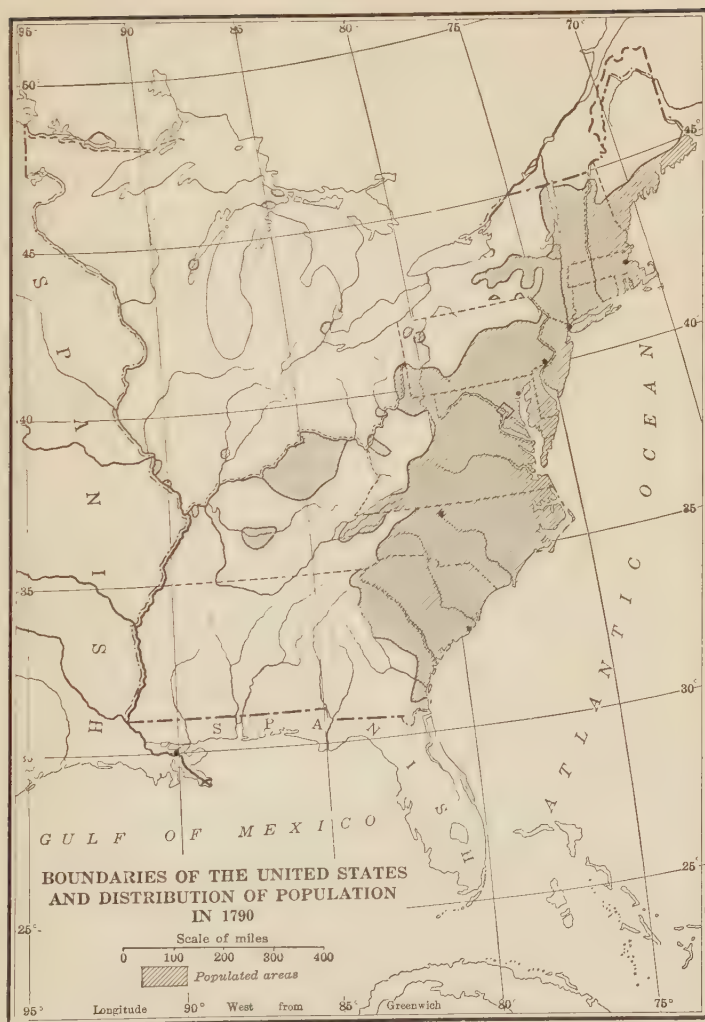
Foreign commerce after the Revolution: *Early difficulties.* — We have seen before (p. 29 ff) that shipbuilding, ocean-carrying trade, and commerce had been the chief sources of

livelihood for a large part of the colonists from New England to Chesapeake Bay. These activities, we have also seen, were greatly stimulated by the British Navigation Laws as long as we were a part of the British Empire. The Revolutionary War, however, brought to an end most of these profitable occupations, and it was a number of years thereafter before a recovery of the old-time aggressiveness upon the seas took place. For this delay in reestablishing the prominent position of earlier years there were two principal reasons: first, the weakness of the new government, and second, the hostility of foreign nations toward our shipping and commercial interests.

British Navigation Acts, instead of aiding our shipping, now operated against our ships just as they did against those of any other foreign nation. American ships, therefore, were prevented from carrying goods to and from the British West Indies and between these islands and any other country, including England. As the colonial West Indian trade had amounted to a million and a half pounds sterling in 1770, it can readily be seen that a great loss was sustained.

Discriminatory laws also hampered American ships and merchants in the direct trade between the two countries. British merchants, for example, were for a time forbidden to buy American-built ships; the shipment to England of American goods in American ships was limited to such crude products as pitch, tar, turpentine, and masts; and the owner of the ship, moreover, must be a resident of the state from which the goods were sent.

The French, the Dutch, and the Spanish likewise closed much of their trade to foreign ships. To make matters still worse the Mediterranean commerce was practically shut off by the piratical states of northern Africa. These nations were encouraged in their robberies by English diplomats, who saw in the Algerians and Moroccans willing agents to prey upon the rivals of British commerce. To the Americans, unprotected by a navy and backed by no efficient government, these pirates for years effectively barred the Mediterranean.



All the efforts of the government to bring to an end the foreigners' insults and discriminations during these early years were in vain. As we have already seen (p. 103), the Congress of the Confederation had no power to pass retaliatory laws. The attempts of the several states to do so, we have also seen, were met with cynical indifference by the English, and were entirely unsuccessful.

As a result of the nation's weakness during this period there was a very slow recovery of its shipping and commercial interests. In 1789, when the new government under the Constitution took hold of affairs, a large part of American trade was being carried on in alien ships. There were at that time somewhat over one hundred and twenty-three thousand tons of American shipping engaged in foreign commerce. At the same time there were over ninety-four thousand tons of English ships occupied wholly in carrying American goods.

Renewal of shipping activity. — Wherever there seemed to be an opening, however, the energy of the American sailor made itself felt. Long before this period the whalers had penetrated the Antarctic and plied their calling in the Pacific. During the years immediately following the Revolution fur sealing off the Northwestern shores and among the Islands of the Behring Sea had begun. In 1784 the first ship to engage in the China trade set forth from New York, and soon afterward numerous vessels were sailing in these regions.

Laws in aid of American shipping. — When the first Congress under the Constitution met in 1789, it immediately set about the task of restoring American sea supremacy. The first tariff law, besides providing for revenue for the government, also contained measures for the encouragement of shipping. A reduction of ten per cent in the duties was allowed on goods imported in American vessels. In order further to stimulate direct trade with the Orient, a still greater advantage was permitted on tea brought directly from these regions in American ships. In this way the monopoly long held by the English East India Company was broken. Nearly forty years later it was stated that since

the passage of this law not a pound of tea had been imported in any other than American ships.

Congress in 1789 also passed another law which gave special tonnage tax favors to American ships. By this act American built and owned ships upon entering our ports had to pay a tax of six cents a ton, American built and foreign owned ships thirty cents, and ships built and owned by foreigners fifty cents. If engaged in the coasting trade, an American vessel had to pay tonnage dues only once a year, but the foreigner paid every time he entered port. The latter was thus effectively excluded from this trade, but — anticipating our narrative somewhat — to make assurance doubly sure, in 1817 he was absolutely forbidden the carrying of goods from one American port to another. The effects of these laws were felt at once. Between the years 1789 and 1791 American shipping registered for foreign trade nearly trebled.

European wars and American shipping and commerce, 1793 to 1807. — A stimulus greater than protective laws, however, soon appeared. The advantage over American traders which England and the continent of Europe had enjoyed, they now threw away by plunging into a twenty years' war. Begun as an effort of the monarchs of Europe to suppress the ideas of the French Revolution, in a few years it had developed into a life and death struggle between England on one side, and Napoleon, supported by the armies of France and much of the resources of the rest of Europe, on the other. More and more the shipping of the warring nations was drawn into the struggle, and the carrying trade of the whole world was left to neutrals. Of these, the one most favorably situated to take advantage of the opportunity was the United States.

For fifteen years American merchants, shipowners, and shipbuilders were reaping a golden harvest at the expense of Europe. American shipping engaged in foreign trade increased from under one hundred and twenty-four thousand tons in 1789 to nearly one million tons in 1810. The financial gains were so great that the adventurers were undismayed by the risks of seizure and con-

fiscation. Freight profits alone are said to have amounted every year until 1807 to between seventy and eighty dollars a ton, and the average annual total from 1795 to 1801 to thirty-two million dollars.

The struggle for the freedom of the seas. — Nevertheless, the profits did not come without many difficulties. Foreign powers, England in particular, did not look with composure on the carrying off by the Americans of one of their great sources of wealth. Moreover, belligerents never are too careful of the feelings of neutrals. Early in the war, therefore, first England, and then France, began to make difficult and ever more difficult the sailing of the seas by the ships of any other nation.

The United States, on the other hand, owing to the fact that so many of its economic interests lay on the seas, while at the same time it could not rule the waves, became the leading exponent of the doctrine that the seas should be free to commerce and merchant ships at all times, whether in peace or war. It was with this in view that attempts were made to negotiate commercial treaties embodying these principles. With England, as we have seen, no treaty could be made, and at the outbreak of the war there began that century-long controversy over the question of the freedom of the seas and the rights of neutrals in war time.

The "Rule of 1756." — Soon after the war opened, both belligerents began the seizure of neutral vessels. France, as soon as England entered the war, had suspended her navigation laws so as to permit neutrals to bring to her ports the products of her colonies, thus releasing French vessels for war service. Americans had eagerly responded. Such trade, however, English courts ruled was illegal under what they called the "Rule of 1756." This rule declared that trade which the laws of a belligerent nation had not permitted to foreign ships in time of peace could not be opened to neutrals in time of war. Under this ruling many American vessels were condemned.

The Jay treaty. — In an effort to patch up the many differences with England, including disputes over the carrying out of

certain parts of the treaty of 1783, the West India trade, and seizures on the high seas, John Jay was sent in 1794 as a special envoy to negotiate a treaty. The treaty was made, but it contained little that the United States had hoped for. England refused to agree to anything at all as to the freedom of the seas. An unsatisfactory concession, which the Senate rejected, was secured concerning the West India trade. The best that can be said for the agreement is that it put off war with England. On the other hand, France was infuriated to find that her old ally would enter into negotiations at all with her enemy. Seizures and confiscations, therefore, went on as before. Around the West Indies, especially, many American vessels were taken and confiscated by both sides.

The United States and the French Republic. — Negotiations were likewise tried with France, but with even more unsatisfactory results. So savage did the French become in their attack on our commerce, and so insulting were their officials to our agents sent to negotiate with them, that by 1798 we were nearly brought to war. Hostilities, indeed, were actively opened on the seas, and numerous encounters took place between American and French vessels in the vicinity of the West Indies. Before war was actually declared, however, Napoleon came into absolute control of the French government, and his plans for the moment called for peace with America. Consequently, in 1800 a treaty was made in which the United States gave up its claims as to the French seizures, and France gave up its rights under the treaty of 1778.

Orders in Council and Decrees. — Beginning with 1803 the war took on a more bitter aspect. It had by that time become a gigantic struggle between England and Napoleon. Both sides began to draw more tightly their restrictions upon neutral trade. By 1805 Napoleon had, it is true, lost his navy, but he kept up his attack on neutral ships by means of privateers, or by some sort of trickery. England enforced more strictly the "Rule of 1756." By a number of "Orders in Council" she further attempted to shut off France and her allies completely from

the outside world. Decrees framed by Napoleon and issued from Berlin, Milan, and elsewhere aimed to retaliate in like manner upon England. The result was that most of the coast of northern Europe and all of England were under a condition of blockade, and each side went ruthlessly at the business of seizing all neutral vessels which it even suspected were bound for the ports of the enemy. English war vessels went so far as to hover off the coast of the United States to intercept outgoing ships. Worse than the seizure of merchantmen was the right claimed by England of searching our vessels, even those of the navy, for men suspected of having deserted from the British service.

Embargo and Nonintercourse acts. — As all protests were in vain, Congress resorted to the economic boycott, an expedient which had proved successful in securing the repeal of the Stamp Act before the Revolutionary War. First came the Embargo Act in 1807, prohibiting any vessel's leaving an American port except in coastwise trade. As no favorable results came from this prohibition, the embargo was modified early in 1809, and nonintercourse with the belligerent nations was substituted for it. This afforded some relief to American ships and trade, as it permitted vessels to sail for ports not under the control of England or France. The belligerents were too much in earnest by this time, however, to pay much heed to the petty moves of a helpless and second-rate power. The final humiliating act was that known as "Macon's Bill No. 2," which put an end to nonintercourse, but offered as a bribe to the belligerents the revival of nonintercourse with one as soon as the other should agree to cease its offenses against American ships. In response to this offer, both made conditional promises, which, owing to the conditions, were never carried out. Hence, Macon's Bill No. 2, like all the rest in so far as results were concerned, became a "mere scrap of paper."

While the Embargo Act saved our vessels from confiscation, it likewise prevented many of them from being used at all. Dozens were tied up and hundreds of seamen had temporarily to seek other occupations. Many vessels whose masters heard of the

embargo while on a cruise did not return, but continued trading from one foreign port to another. The lifting of the embargo again sent the vessels on their way, but many were seized, and the former activity had not been regained when the United States finally entered the war. This, for a time, effectively put a stop to the great profits which Americans had for so long been draining from the war-mad nations of Europe. The temporary ending of the carrying era, however, opened up other avenues for the investment of capital. In another chapter we shall see how, protected from foreign competition by embargoes and war, an industrial growth of far-reaching importance took place.

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QUESTIONS

1. What was the financial condition of the United States government in 1789?

2. What acts passed by Congress between 1789 and 1810 show its increased power under the Constitution?

3. Of what did the national debt consist? What is meant by national credit? Was it worth the cost of encouraging speculation in government bonds? Could the speculation have been prevented? Was national credit worth anything during the Great War? Why were government securities worth more in 1790 than in 1788?

4. What methods were taken to reduce the national debt between 1789 and 1812?

5. What foreign coins circulated in the United States?

6. Describe the currency system adopted in 1791.

7. What difficulties are there in using two coins of different metals each serving as the unit of value?

8. In what ways was it intended that the United States Bank should be of use to the government? Summarize the differences between the views of the Federalists and the Republicans. How could the Bank concentrate money power? What were the provisions of the Bank charter?

9. Summarize all the measures advocated by Hamilton while he was secretary.

10. What were the causes of the decline of American foreign commerce and shipping between 1775 and 1789? How were they reestablished?

11. What caused the European wars, 1791-1814, to begin? Why did they last so long? How did Americans benefit from these wars?

12. Should the seas be open to commerce in war as well as in peace? Would the United States government have advocated the doctrine of the freedom of the seas if it had had the greatest navy in the world? Does it advocate such a policy now?

13. What was the "Rule of 1756"? Was it a fair rule?

14. What were the provisions of the Jay treaty? What were the results of the treaty?

15. Describe the restrictive measures of England and Napoleon after 1803. The European war became a war between England and Napoleon, and the Great War is often said to have been a war between England and Germany. Why does England seem to be the objective of any power seeking to dominate Europe?

16. What were the effects of the Embargo and the Nonintercourse acts (1) on England, (2) on France, (3) on the United States? Whom did they injure the most?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the federal government has exercised powers greater than intended by the framers of the Constitution.

2. Resolved that the seas should be open to commerce in war as well as in peace.

3. Resolved that there was as much reason for the United States to go to war with France as with England in 1812.

CHAPTER IX

NATIONAL EXPANSION: THE LAND POLICY, 1783-1841

Introduction

The Mississippi as the western boundary

The influence of abundant lands

Establishing title

Claims of the states

Cession of territorial claims by the states

Indian titles

Organization of the Western territory

The Ordinance of 1787

Economic aspects of the Ordinance

Land surveys

Development of the public land policy

Early land sales

The encouragement of settlement

Cash payments for land

Preëmption laws

Settlement of the Upper Mississippi Valley

Ohio

Expansion from 1810 to 1830

Origins of the Mississippi Valley emigrants

Territorial acquisitions (1803-1821)

The struggle for the Mississippi

The purchase of Louisiana

Acquisition of Florida

Introduction. — We have seen (p. 93) how, toward the end of the colonial period, people were beginning to feel cramped in their narrow quarters between the mountains and the sea. Along the coast the cities were becoming numerous, while in the back lands the frontier population was rapidly growing, and was beginning to demand room for further expansion. Instead of permitting greater freedom of action, however, Eng-

land attempted to circumscribe the colonists even further by strict enforcement of the laws existing, by the passage of new ones, and by forbidding emigration to the Indian country west of the mountains.

The Mississippi as the western boundary. — Besides independence, therefore, the most significant concession secured by the United States in the treaty of 1783 was the establishment of the Mississippi River as the western boundary. This was made easy, as we have seen (p. 101), primarily by the settlement of Kentucky and Tennessee, and by the conquest of the Northwest by George Rogers Clark. Moreover, during the peace negotiations, the English were eager to deal with the American agents alone and separate them from the influence of the French diplomats. Without belittling the value of the aid rendered by the French during the war, we should, nevertheless, not lose sight of the fact that France was fighting in her own interests, and that during the peace negotiations she plotted with Spain to prevent the United States from getting the land between the Alleghenies and the Mississippi. All this worked to the advantage of our agents in arranging the terms of the treaty. As England preferred to have her former colonists rather than her European rival in possession of the lands to the south of the Great Lakes, the difficulty of persuading her to agree to the Mississippi as the western boundary was greatly lessened.

The influence of abundant lands. — It must constantly be borne in mind that the steady acquisition of land proved to be of the most vital importance. We shall see how for seventy-five years it influenced our relations with foreign powers. Throughout our history our politics and laws have often hinged upon some question concerning the land and its occupation. It has led to a constant shifting of the center of population, of power, and of wealth toward the West. Thus, the commercial and manufacturing interests of the East have, in increasing measure, had to share their influence with a people whose interests were largely agricultural. At the same time the agriculture of the West has permitted the Eastern population to

concentrate its energies more and more upon manufacturing, commerce, and finance. For a hundred years the land exercised a powerful influence upon the relations between capital and labor, because it made difficult the development of a traditional industrial class. Unlimited lands, to be had almost for the asking, shaped the character of Americans, making them restless and speculative, wasteful, careless, and often apparently lawless. The free and easy life of the frontier contributed very largely to a spirit of democracy. Slavery, the all-absorbing domestic question from 1820 to 1860, flourished upon the ever-widening fertile lands.

Establishing title: *The claims of the states.* — Before the national government could begin to sell the land west of the Alleghenies, it had to dispose of the claims of the states and the rights of the Indians. At least seven of the states had more or less vague titles to parts of the West as far as the Mississippi — titles based to a large extent upon the authority of old charters. Thus, Kentucky formed but a part of the state of Virginia. To a part or the whole of the territory north of the Ohio River, New York, Virginia, Massachusetts, and Connecticut each believed it held title. Tennessee belonged to North Carolina, and much of what is now Alabama and Mississippi, to Georgia and South Carolina.

Cession of territorial claims by the states. — These conflicting interests caused much jealousy on the part of the landless states, and bade fair to prevent the formation of a stable union. To forestall such a catastrophe, Congress, soon after the end of the Revolution, urged the landed states to cede their rights for the benefit of all. It was not long before this was done. New York first gave up its claims, and was soon followed by Virginia. By 1802 all the states had surrendered their lands except Connecticut, which retained a narrow strip in Ohio south of Lake Erie, known as the "Western Reserve."

Indian titles. — The titles of the Indians were such as the rover and the hunter have. They held good only until the land was desired by the settler and the farmer. The extinguishing

of these rights took place gradually. Settlers would take up the land within certain boundaries, and then get ready to go farther. There would follow a more or less intense Indian warfare, after which the tribes would surrender a part of their lands by "treaty" and retire farther to the west. This was repeated until they had passed beyond the Mississippi and Missouri rivers.

Organization of the Western territory: *The Ordinance of 1787.* — Congress had promised that the Western lands should be disposed of for the common benefit and that out of them new states should be formed. As soon as New York and Virginia had surrendered their claims, an ordinance was passed for the government of the territory (1785). This, however, was superseded by another passed in 1787, since become famous as the Northwest Ordinance, and the basis of all future territorial government. The Ordinance applied only to lands north of the Ohio River. It provided for the division of the territory into not more than five states, for the appointment of a governor, judges, and military authorities by Congress, for a territorial legislative body when the population should have risen to five thousand, and for admission to the Union when it should have reached sixty thousand. It further provided liberally for education, and forbade civil and religious oppression and slavery. In 1790 a similar instrument was passed for the government of the public lands south of the Ohio, except that the clause forbidding slavery was omitted.

Economic aspects of the Ordinance. — Congress passed these laws in order to make the public lands attractive to land buyers and settlers. The government hoped, by the sale of the land, to get a much needed revenue. Secondly, the laws were necessary in order to satisfy the claims of the Revolutionary soldiers, who had been given Western lands, but who could not secure the benefits of their grants until measures had been taken for their orderly settlement. Incidentally, it was felt that settlement would be the surest safeguard against land-hungry foreign powers. By establishing law and order, insuring educational

advantages, and civil, religious, and economic freedom, Congress hoped to realize quick returns in money by the sale of large areas in a body. This required capital and men who were willing to take risks in the hope of liberal returns if the ventures should be successful. Hence, the first sales were to companies of capitalists from the East. One such organization, the Ohio Company, had well-defined plans for the purchase of a large tract of land as soon as a fundamental law for the territory should have been established.

Land surveys. — Congress, under the earlier ordinance, began an immediate survey of the Ohio lands. In Kentucky and Tennessee, where settlement had begun before the Revolution, much confusion and many lawsuits arose from the lack of accurate surveys. In the Northwest Territory a beginning of the system of land surveys which extended later over almost all the western two-thirds of the country was made. A line called a meridian line was first drawn north along the boundary between Ohio and Indiana. Parallel to this, at intervals of six miles, other lines were drawn until seven north and south "ranges" had been established. Lines were then run at right angles to these and also at six-mile intervals, forming a checkerboard of squares, six miles on each side. These were called "townships." The townships were themselves subdivided into sections one mile square, or six hundred and forty acres, and later, when the government began to give away or sell its land to homesteaders, the quarter section of one hundred and sixty acres became the ordinary size of a farmer's holding.

Development of the public land policy: *Early land sales.* — Several purchases were soon made. The Ohio Company took one million five hundred thousand acres along the Ohio River, where, at the mouth of the Muskingum, it founded Marietta in 1788. Between the Great Miami and the Little Miami rivers, where Cincinnati is situated, Chief Justice Symmes of New Jersey secured one million acres. Other lands along the Scioto and the Muskingum were held for military bounties, while most of the remainder now comprising the state of Ohio was reserved

by Congress for future disposal. In selling such large blocks of land to speculators, Congress had, however, violated the national ideals of democracy. It soon came to be felt that gaining revenues from the land was not vital, but that its division among all the people and its occupation by actual settlers were extremely important.

The encouragement of settlement. — Gradually, therefore, the settlement of the land became the primary object of the public land laws. In 1796 the price was fixed at two dollars per acre — double the previous price and three times what the Ohio and the Symmes companies had paid. In 1800 a credit system was adopted. One-fourth of the price was to be paid within forty days of the purchase, and the rest in equal installments at the end of the second, third, and fourth years. Hitherto sales had been made at auctions in Eastern cities, but at this time four points in Ohio were designated as places where the auctions were to be held, thus giving the people on the spot a chance to buy. Furthermore, purchases at private sale after the auction were authorized.

There also began at this time a gradual reduction in the minimum amount which might be purchased. Originally this had been six hundred and forty acres, and there had been no limit to the maximum. In 1800 the minimum became three hundred and twenty acres. Successive reductions brought the amount by 1820 to eighty acres.

Cash payments for land. — An important step was taken in 1820 when the credit system was abolished and the price reduced to one dollar and twenty-five cents per acre. Buying on credit had encouraged speculation in land by absentees. Much complaint arose on this account, and because of the special prices that had been given to large buyers. Buying on credit had also led to a mild form of speculation by the settlers, who would often buy more land than they could pay for, gambling on future crops for their second, third, and fourth payments. In 1808 two million dollars was due the government from land buyers, and later this amount was greatly increased.

Many failed to make regular payments, and Congress had to grant extensions of time so as to prevent the loss by hundreds of settlers of their labor and improvements. Those who were in arrears were, by the act of 1820, permitted to pay for as much of their land as they could, the rest reverting to the government. Henceforth land was sold only for cash.

Preemption laws. — Preemption laws had a purpose similar to the special relief acts just mentioned. Many people had settled on the frontier before the lands were opened for sale and without taking the trouble to pay for their farms. These were the "squatters." By special preemption acts they were given the first opportunity to buy their clearings when the lands were opened for settlement. At first such acts were passed to cover the cases as they arose. The first general act, to last for one year, was passed in 1830, and this was renewed yearly until 1841, when it was made permanent. These steps — small holdings, nominal price, cash payments, and the right of preemption — mark the development of the land policy up to the Civil War.

Settlement of the Upper Mississippi Valley (1768-1830). — At the close of the Seven Years' War there may have been two thousand white people west of the Allegheny Mountains. These consisted of a few French settlers, the inhabitants of the fortified posts, and hunters and trappers. As we have seen, however, the land south of the Ohio had been rapidly filled during the Revolution with emigrants from the East. So constant had been the migration that both Tennessee and Kentucky were nearly ready for statehood when the Virginia and North Carolina claims upon them had been surrendered.

Ohio. — The migration to Ohio began in earnest soon after the passing of the Northwest Ordinance. By 1795 about fourteen thousand people had established themselves in settlements along the Ohio River and for short distances up the Muskingum, Scioto, and Miami rivers. Indian threats and the defeat of St. Clair stopped the movement for a time, but after the victory of Wayne, which cleared most of Ohio from the danger of attack, it started again with renewed vigor. By 1800 there were

forty-five thousand people in the territory, and in three years more it was ready for admission as a state.

Expansion from 1810 to 1830. — The movement of the population westward resembled the flow of slowly rising water. It did not proceed with an even course, but found its way quietly around obstructions until the rising flood was enough to cover them all. At first it sought the river courses and the hard-wood sections. It left behind, temporarily, uninhabited "islands" situated too far away from the water. For a time it might stop



From the "American Pioneer"

CAMPUS MARTIUS MARIETTA

Some fortified refuge like this was a necessity as a protection against the Indians in all the advanced frontier settlements in the densely wooded country west of the Appalachians.

before, or flow around the Indian reserves and the treeless prairies of Indiana and Illinois. Proximity to the rivers and lakes was necessary as, at first, these provided the only cheap course to the more settled regions, and hence to the markets. The lands where the hard woods grew were reputed to be the most fertile. The prairie, although more easily prepared for cultivation than the forest lands, and although, for the most part, it was of the best quality, was avoided because of the lack of wood and water.

In 1810 we find most of the Western settlements situated

along the Tennessee, Cumberland, and Ohio rivers, or extending in narrow bands up their tributaries. Likewise, an arm of settlement reached out along the southern shore of Lake Erie, with extensions southward along the rivers. People had occupied the entire course of the Ohio River, had crossed the Mississippi at St. Louis, and had begun to ascend the Missouri. They had barely begun to spread into southern Indiana and Illinois, the combined population of which numbered less than thirty-seven thousand.

By 1830 Ohio had been completely cleared of the Indians, and the whole state was settled, the greater density being in the southern part. Of Illinois and Indiana, only the northern thirds were still in the hands of the Indians. From Tennessee a belt of settlement reached down into Alabama and joined with another extending north from the Gulf. In Missouri a scattered population occupied the northern half of the state along both sides of the river.

Origins of the Mississippi Valley emigrants. — The earliest pioneers, as we have seen, were mainly from the Southern states. The conquest of Kentucky and Tennessee was made by the people who for years had been filling the back lands of Virginia, the Carolinas, and Georgia. The first stopping place had been Tennessee and Kentucky, but with the opening of the Northwest Territory large numbers crossed the river into Ohio, Indiana, and Illinois. The absorption of the best lands by the cotton planters continued to drive those who could not become planters west and northwest. To the settlement of Ohio, Pennsylvania also contributed liberally, and by 1820 emigration from New England to the Northwest had begun in earnest.

But not all of those who moved from Tennessee and Kentucky went north. The profits from cotton raising proved a strong attraction, and many went south to the rich lands of Alabama and Mississippi, accumulated large holdings, and became planters. A little illustration will show how much meaning might be attached to the direction which one took in his migrations. About the time that the family of Abraham Lincoln

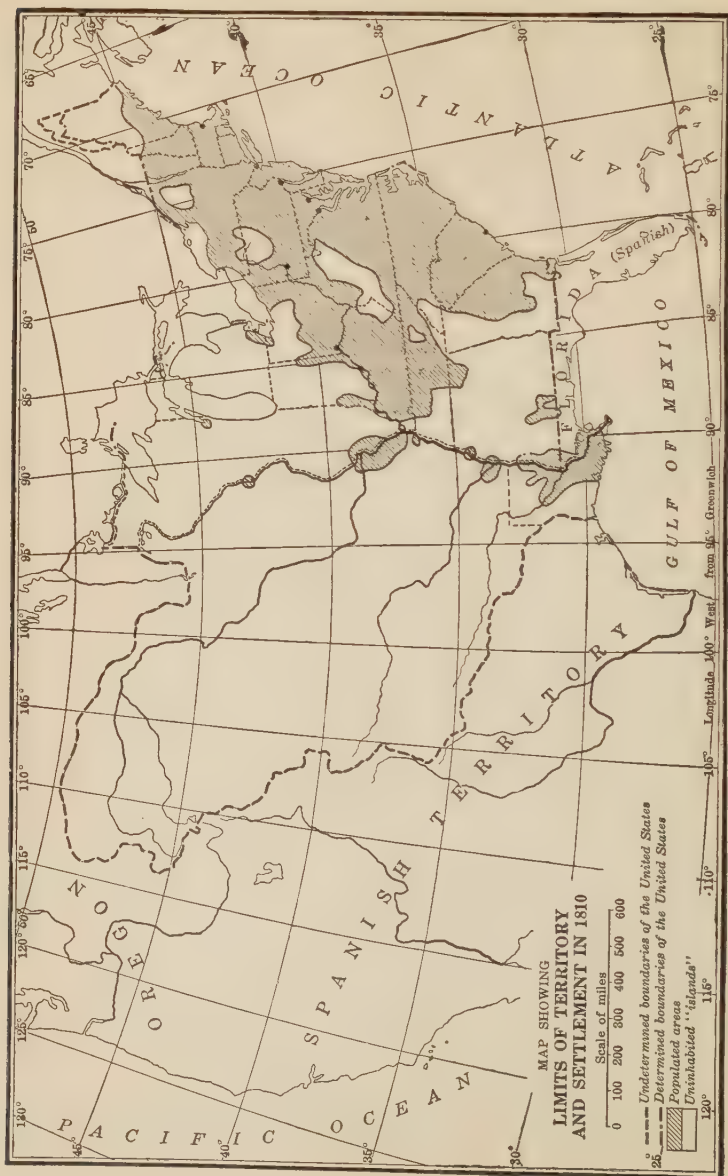
was crossing the Ohio from Kentucky, that of Jefferson Davis was moving from near the same region into Alabama and then to Mississippi, where later it became an influential member of the cotton aristocracy.

After 1820 European immigration began to play an important part in the peopling of the West as well as of the East. The numbers of foreigners coming in steadily increased from that date onward, but it was not until after 1840 that the floodgates broke down and the coming of foreign nationalities began to resemble an inundation.

Territorial acquisitions (1803-1821). — We have now followed the people until they had completed the occupation of the lands secured in the treaty of peace with England in 1783. They had, indeed, passed beyond the bounds of that territory. The Mississippi River had proved no more able to hinder their progress than had the mountains in earlier days. Moreover, while they had been filling up the Northwest and Southwest territories, vast new domains had been added to the nation's holdings, and were but waiting for the people to come and settle upon them. Let us here retrace our steps to note briefly how the new dominions came into our possession.

The struggle for the Mississippi. — The new government had scarcely started when the problems of empire began. The people of Tennessee and Kentucky, and those north of the Ohio River, became more and more restless because of the lack of a market for their produce. The only practicable outlet was by way of the Mississippi, the mouth of which was controlled by Spain. In the treaty between the United States and England, it had been agreed that both should have equal freedom of navigation of the river. Angered by a secret article in the treaty which favored England at her expense, however, and having a well-founded suspicion of the westward expansion of the Americans, Spain refused to permit free passage over that part of the Mississippi controlled by her.

To add to the trouble, people from Tennessee began to migrate into Florida, the territory of Spain, and to settle there.



Out of this grew frequent conflicts between them and the Spanish authorities, followed by appeals by the American colonists to the United States government for protection.

Purchase of Louisiana. — The question of the navigation of the Mississippi was disposed of temporarily by an agreement in 1795 in which Spain granted the use of the river and the right to transship goods at New Orleans. Hardly had this arrangement been made, however, when the United States government was aroused by the news that Louisiana, which included the mouth of the Mississippi, had been transferred to France (treaty of San il de Fonso, 1800). Now France, headed by the world-conquering Napoleon, would be entirely different as a next-door neighbor from the weak and inefficient Spain. It was with this in mind that Jefferson was prompted to state that the acquisition of Louisiana by France would result in our marriage to the British fleet and nation. What he feared was the establishment of a great French colonial empire on this continent.

Fortunately for us, however, an army that Napoleon had sent to San Domingo, which he perhaps hoped to make the base of his operations, had been destroyed by disease and by the negroes. Then, after a short peace, war broke out again in Europe in 1803. Busy at home, and with his plans for colonial empire fading, he one day unexpectedly offered to sell us the whole of Louisiana. The United States Minister, Livingston, had been authorized to buy the mouth of the Mississippi, but without waiting for further instructions, he hurried through the negotiations and finally struck a bargain at fifteen million dollars.

Just what we had received nobody at the time knew. The northern, southern, western, and part of the eastern boundaries were unmarked. At any rate, we had secured New Orleans, and we claimed both banks of the Mississippi from the source to the mouth. The purposes of the transaction — the unhampered control of the great Western waterway and the removal of a dangerous neighbor — had been accomplished.

Acquisition of Florida. — The question as to the eastern boundary of Louisiana was settled within a few years. For a

period following the purchase there was constant bickering between the United States and Spain as to the line separating Louisiana from Florida. The Spanish territory here consisted of two parts, East and West Florida, the former being the present state of that name. West Florida was a narrow strip along the Gulf coast south of parallel 31° , but the United States and Spain could not agree as to where it ended and Louisiana began. During the years 1810 to 1812, in the midst of unending dispute between the Spanish authorities and the Americans who had settled in the district, President Madison decided forever the question of boundary by extending, without consulting Spain, the authority of the United States over a large part of West Florida. The eastern half of this region later became parts of the states of Alabama and Mississippi, and the western a part of Louisiana.

The quarrel over East Florida continued for a few years longer, but of the final outcome there could be no doubt. The Spanish government was all too weak to resist successfully the pressure of the eager Americans from the north. The territory was made a refuge by marauding Indians and by smugglers. Rumor said, also, that it was looked upon with desire by England. American punitive expeditions did not hesitate to cross the line in pursuit of the Indians. Spain, therefore, yielding to the inevitable, transferred to us all her claims upon Florida for five million dollars (1819-1821). In the same treaty the two governments agreed upon the boundary between their possessions west of the Mississippi. In this agreement the United States gave up its claims upon Texas as part of the Louisiana Territory.

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QUESTIONS

1. Was there any connection between the Appalachian Mountains and the American Revolution?

2. What influences determined the western boundary of the United States as fixed in the treaty of 1783? Trace this boundary on the map.

3. Summarize the influences of abundant lands on American history.

4. What states had claims to Western lands? What was the extent of each of these claims? (See COMAN, *Industrial History*, map, p. 159.)

5. Summarize the provisions of the Northwest Ordinance. What were the purposes of the act? Could the clause concerning slavery have been enforced by Congress in any part of the Northwest Territory which had become a state? Compare the early land and territorial policy of the United States with the policy of the English government toward chartered companies.

6. What advantages are there in the checkerboard system of land surveys? What disadvantages? Could it be established everywhere?

7. Why did Congress desire to sell large tracts of land in 1787? What large tracts were disposed of? (See COMAN, *Industrial History*, map, p. 161.) What induced Congress to change its policy of land sales? Trace the changes made between 1796 and 1841 in the methods of disposing of land.

8. Why does the line marking the frontier take such a winding, uneven course? Does the frontier always form a line? Trace the frontier in 1774, 1783, 1790, 1810, 1820, 1840. (See maps pp. 95, 123, 142, 155, 170; COMAN, *Industrial History*, p. 129.)

9. Where did most of the immigrants to Kentucky, Ohio, and Alabama come from? Did emigrants ever move north or south? Trace the possible routes of an emigrant from Boston to Cincinnati.

10. What were the causes of the differences between Spain and the United States regarding the Western country? (See CHANNING, *Students' History*, pp. 228, 229, 302, 340, 375.) How were the differences settled?

11. Give an account of the purchase of Louisiana. In buying Louisiana

was Jefferson inconsistent with his theories regarding the Constitution?
How did the United States get the Floridas?

12. Trace the boundaries of the national domain after the purchase of East Florida.

SUGGESTED QUESTION FOR DEBATE

1. Resolved that the opening of the West was of greater economic importance between 1783 and 1830 than ocean commerce.

CHAPTER X

MANUFACTURING, 1789-1816: ECONOMIC INDEPENDENCE AND ISOLATION

Early characteristics of American manufacture

Manufacturing after the Revolution

Industrial Revolution in England

Attractions of other occupations

The Industrial Revolution in America

The Embargo

Cotton-yarn mills

Weaving

Other industries

The frontier and the growth of manufacturing

Reaction

Revival

America for Americans

Significance of the War of 1812

Internal improvements

Protection to American industries

The Monroe Doctrine

Early characteristics. — We have seen that throughout the colonial period manufactures were, as a rule, only a by-product of agriculture. This was true even in the districts, such as New England, which had certain natural advantages for manufacturing, and where the soil was poorly fitted for agriculture. Industries were carried on in simple shops with few workmen, or on the farm and in the household. Enterprises with ten or twenty employees were few. If goods were made for sale, the market was found within a few miles. Everywhere there were manufactures of all kinds; on a single farm there would probably be a great number of industries. Nowhere were there even moderate concentrations of capital in industrial centers such

as we have come to be so well acquainted with today. Up to the War of 1812 the jack-at-all-trades had almost the whole field to himself.

An illustration of this dispersion of industry may be found in the manufacture of textiles. At the beginning of the eighteenth century the people of the colonies were spinning and weaving in their homes most of the material from which their clothing was made. A century later Hamilton stated that they were in the same way supplying from two-thirds to four-fifths of their needs. Twenty years later still, according to Gallatin, two-thirds of the country's clothing, hosiery, and household linen was produced in like manner. Moreover, until the Civil War the home continued to furnish a large proportion of the nation's cloth, although it met as the years went by with increasing competition from other methods of production.

Manufacturing after the Revolution. — For twenty years after the end of the Revolution, manufacturing by machinery made but slow progress in America. For this there were two especially good reasons, one of which was foreign competition, and the second, the superior attractiveness to American capital of other occupations. It is with these obstacles to manufacturing that we have now to deal. While there was some growth of small power mills in certain of the seaboard states, as we shall see, for the most part manufacturing continued to be carried on after the primitive methods of colonial days.

Industrial Revolution in England. — Until 1807 Americans who bought manufactured goods more than likely bought them of the English manufacturer. In England there had taken place during the last fifty years of the eighteenth century a revolution in industry.

The use of coke as a smelting fuel had revolutionized the iron industry. Rapidly, too, the machine tool had taken the place of human skill in metal working, resulting in a speed and accuracy in this work never before attainable. Notable inventions in spinning and weaving had laid the foundations for a complete revolution in this industry as well. Finally, during the

same years, power — at first horse and water power and then steam — had been applied to the new machines. By the end of the century industry in England had gone far on the way to removal from the home and the small shop to the factory. Nowhere else in the world could goods be produced on such a grand scale so speedily, or at such small cost. Everywhere the old methods of manufacture were finding it harder to compete with the revolutionary methods employed in England.

The English manufacturer, too, had a more accessible labor supply, much of which was steeped in the traditions of centuries of craftsmanship. He was also backed by the abundant capital of London, the world's financial center. He could, therefore, give long credits — a favor necessary to buyers in the United States, who could oftentimes pay their bills only after their goods were sold. Americans had got into the habit of looking to England for their manufactured articles, and domestic industry did not find it easy to break through this habit, even if it could have competed with the cheaper English goods.

Attractions of other occupations. — Perhaps an even more important reason for the slow growth of American manufacturing was that men with capital saw greater promise of profits in other fields. The lure of shipbuilding, the carrying trade, and commerce continued to be as irresistible as in colonial days. In a former chapter we also saw how the new government early passed laws which stimulated to new life the merchant marine. Then came the great wars in Europe, swallowing up foreign shipping and giving Americans an opportunity to monopolize the carrying trade and much of the commerce of the world. This opportunity American capital eagerly grasped. Consequently, manufacturing on a large scale for the market, an activity that had never been established, was during the early years overshadowed by one which had always flourished and which at this time, under an artificial stimulation, was developing more rapidly than ever before.

The European wars also stimulated agriculture. Almost for the first time in our history, American food was welcomed

in England and on the continent of Europe. Just as men in these lands were drawn by war away from shipping, so likewise were they called away from the farm. The farmers of New York and Pennsylvania, therefore, had such a market for their produce as they had never experienced before. Prices rose and agriculture became profitable.

The Industrial Revolution in America: *The Embargo.* — After 1807 shipping and commercial profits and the profits from agriculture, as well, were suddenly brought to an end by the passage of the Embargo and Nonintercourse acts (p. 128), and then by the beginning of the War of 1812. By these incidents also the American markets were closed to the foreign manufacturer. There was left, consequently, an idle capital and a market without a competitor. Moreover, every household was prepared to furnish its quota of labor. After 1807, therefore, an industrial revolution similar to that in England took place rapidly in America. By 1830 manufacturing plants, started as small neighborhood mills, had grown in size until the modern factory was developed. Labor was brought together in large groups, and the individual laborer came more and more to work upon a single operation. Gradually, scattered industries became localized in favorable centers, and increasing attention was given to organization and to the business, or mercantile, side of industry.

Cotton-yarn mills. — It was in the manufacture of cotton yarn that the change from the domestic to the modern system began. In 1793 Eli Whitney invented the cotton gin. This machine made cotton raising profitable in the South and eventually lowered the price of the raw fiber. Within a half century cotton cloth became the favorite textile of the masses of the people of the world. Between 1793 and 1807 cotton production increased very rapidly in the South, the product going for the most part to England. But even in the United States the manufacture of cotton goods for the market had begun on a small scale in such cities as Boston, Providence, and Philadelphia. In a number of water-power plants the spinning jenny had been put

to work. As England forbade the export of textile machinery, in 1790 Samuel Slater, who had spent many years in an English cotton factory, set up from memory in Pawtucket, Rhode Island, some English spinning machinery. Small mills with this equipment slowly grew in number until 1807. After that date they increased more rapidly, due to the closing of the English source of supply of manufactured goods. All up and down the coast cotton-yarn mills were being put to work, although they were concentrated for the greater part in New England and New Jersey, and around Philadelphia. Within a day's drive of Providence one hundred and sixty-nine mills containing one hundred and thirty-five thousand spindles could be counted in 1815.

Weaving. — While power mills were thus beginning to displace the hand wheel, weaving still remained a handicraft. This domestic industry was, in fact, greatly stimulated by the new yarn mills. Weaving became more and more specialized, and an increasing number of people gave all their time to the work. In some towns of the mill districts whole streets were lined with the little shops of the hand-loom workers. In Philadelphia these craftsmen reached a high degree of art.

Other industries. — The new textile machinery had also been put to work spinning and weaving woollens. The raw material was being produced in greater and greater quantities on the farms both of the East and the West since the introduction of the merino sheep (p. 182). Iron manufactures had also grown largely during the time of the embargo and the war. The production of paper, sugar, hats, leather, boots and shoes, and cordage also had felt the stimulus of an almost absolute freedom from foreign competition.

The frontier and the growth of manufacturing. — We should further notice that this course of industrial growth was constantly being repeated as people moved westward. The new communities began as had the old, working from the simpler forms up through all the grades to the most complex. After about 1820 we might find in the East factories which, in organization, power, and equipment, resembled those of modern

days; as we neared the frontier, we might find scattered everywhere the small mill doing work for the surrounding community; or men in shops or homes working on articles for their neighbors; and lastly, we might find many a community still using hand mills and mortars, hewing lumber from the forests, building houses, making furniture and tools, woolen and linen clothing, leather, boots and shoes, and numberless other articles for use in the house or on the farm.

Reaction. — English manufacturers saw with deep concern the passing of their monopoly of the American market, and at the close of the War of 1812 at once took measures to regain their position. They began to flood the land with their goods, the accumulated surplus of the years just past. They dumped their wares into the country and sold them at auction almost regardless of cost, with the admitted purpose of creating an over-supply and thus stifling "in the cradle those rising manufactures in the United States which the war had forced into existence contrary to the natural course of things."¹ Prices fell so low that many woolen and cotton mills were closed, some of them never to be reopened. Iron manufactories also shut down, and all the other rising industries were affected. Numerous flocks of merino sheep were killed or sold on account of the fall in the price of wool.

Revival. — Yet manufacturing in factories for the market had come to stay. The small mills gave way only to be replaced by factories situated on great water powers developed along such rivers as the Merrimac, the Connecticut, and the Hudson. These great organizations were able to compete with the foreign manufacturer. Instead of relying solely upon the market found along the Eastern seaboard, they turned to the markets of the great West and the South, which were rapidly filling with people, and where the demand for Eastern manufactures was growing even more rapidly than the population. From the development of the South and Northwest during these years, there came to be three distinct economic sections — the cotton and sugar

¹ Quoted in Coman, *Industrial History of the United States*, 189.

raising South, the food-producing Northwest, and the financial, commercial, and manufacturing East. In the establishment of trade between these sections, the United States finally became self-sustaining and independent of the foreigner. Resistance to foreign competition was founded upon a rapidly expanding domestic market; upon improvements in transportation, which enabled the manufactures to reach the market; and, to a degree, upon protective tariffs. Behind these developments was the growing determination of Americans to win economic independence, as they had already won political independence. It becomes necessary at this point, therefore, to interrupt our narrative of the growth of manufactures in order to deal at some length with the development of the spirit of nationalism.

America for Americans: *Significance of the War of 1812.* — The question of the freedom of the seas was only one of the causes of the War of 1812. In fact, that section most interested in ocean commerce — New England — was the least desirous of going to war; while from the one least directly concerned with the sea — the new West — came some of the most ardent war jingoists. The war was really forced by the frontier states upon a reluctant President and the commercial East. The West had been sorely tried by Indian attacks, which, it believed, were instigated by the English from Canada. The concrete purposes of the Westerners were, therefore, the destruction of the Indian power east of the Mississippi, the elimination of English influence in that region by the conquest of Canada, and closer economic union with the East. Underneath every other cause was an undefined desire to gain a position of power and standing among nations. The war, therefore, may be regarded as an expression of a growing impatience with our dependence on the foreigner. We won nothing tangible as the direct result of the fighting, but in the making of a nation determined to throw off the yoke of outside influence, the results of the contest were far-reaching. Consequently the struggle has been with justice called "the second war of independence."



Internal improvements. — The new spirit may be seen in the energy with which the people turned to the problem of internal improvements after the war. Here was concrete evidence that they had begun to see the possibilities of the home market. This they started in to develop by the building of roads, canals, and railroads, and by putting steamers on lakes and rivers. These topics we shall take up in detail on later pages.

Protection to American industries. — Still another form in which the new nationality expressed itself was in the passage of protective tariff acts. As the ruinous competition of the English began, there came an immediate cry from the industries of all parts of the country for legislative action that would prevent the collapse of American enterprise. Tariffs for revenue (p. 114) — some of them mildly protective — had been on the books since the beginning of government under the Constitution. The destruction of the new cotton and woolen mills by English competition after the war, however, together with the decline in all industry, led to demands for tariffs that would safeguard American interests by giving them the control of the domestic markets.

A protective tariff law was, therefore, passed in 1816. Two kinds of duties were levied — an ad valorem and a specific. Twenty-five per cent ad valorem was laid on all cotton and woolen manufactures. A minimum valuation of twenty-five cents per yard was established on cottons, however, so that the actual tariff on these goods never was below six and a quarter cents a yard. The duty on raw wool was fixed at fifteen per cent ad valorem. Pig iron was admitted at twenty per cent, and bar iron at specific rates varying from forty-five cents to a dollar and a half per one hundred pounds.

There was little opposition to the tariff of 1816. Soon thereafter, however, decided differences of opinion on the tariff question arose. The South was by nature opposed to protection. Its interests were almost wholly in raw cotton, of which it was on the point of securing practically a world monopoly. To the South, therefore, protection meant higher prices for the cheap

textiles with which it clothed its slaves, and for its tools and machinery, without any compensating advantages. New England was at first divided on the question, the shipping interests opposing protection as it increased the price of certain shipbuilding materials and also tended to check trade. On the other hand, there were the fast growing manufacturing interests. How rapidly they were growing may be seen by the shift on the tariff made by New England between 1816 and 1828. At the former time this section furnished some of the strongest opposition to the policy; at the latter it was ready to swallow a tariff law that had been drawn up for the specific purpose of offending New England interests. The manufacturing interests of the Middle states, especially those of Pennsylvania, were generally in favor of protection. The Northwest favored the policy because the building up of home manufactures would create a greater market for farm produce.

Beginning about 1820 various interests began agitating for increased tariffs. At once the sectional and political differences became prominent. In 1824 a new law was passed increasing the rates and extending the list of protected articles. In 1828 the question of still higher rates came up in Congress. Since it arose at a time just preceding a presidential election, and inasmuch as there was a powerful group of men who were very anxious to elect Andrew Jackson over Adams, political expediency almost entirely governed the framing of the bill. The enemies of Adams and of the protective policy so maneuvered as to have charge of the measure. In order to win the votes of Pennsylvania and the West, high duties were put on iron articles, raw wool, and hemp. That it might be distasteful to New England, the center of Adams's strength, low duties were put on the grades of cottons and woollens manufactured in that section, and high duties on certain raw materials much used in its industries. The expectation was that the New Englanders in Congress would defeat the bill and thus alienate the votes of New York, Pennsylvania, and the West from Adams in the coming election. The New Eng-

landers, however, in the hope of saving Adams, voted for the measure, and it was passed in spite of the opposition of its Southern sponsors. The whole incident was merely a game played by politicians for presidential campaign purposes. Almost immediately after the election the repeal of various sections of the law began, and by 1832 many of the worst abominations were removed.

In 1832 a new act was passed more pleasing to the protectionists. By this time Southern opposition, in which Calhoun led, had become so strong that South Carolina took steps to nullify the law, threatening to prevent the collection of the duties within her borders. The matter was finally settled by compromise. In place of the law of 1832 a new act (1833) was substituted. This law provided for such reductions in the tariff every two years as to bring it to a uniform rate of twenty per cent on all commodities by 1842. The law went into effect, and the reductions were made as provided by it.

The Monroe Doctrine.— Still another evidence of a stiffening American backbone was a declaration by President Monroe in 1823 of what stand the United States should henceforth take toward the relations of European governments with any part of the Western World. This declaration was inspired by two sets of circumstances. In the first place, the Central and South American colonies of Spain had, between the years 1816 and 1822, declared their independence from the mother country, had set up republics modeled after our own, and, in the latter year, had secured recognition from the United States. The reactionary monarchs of Europe, however, having been restored after the fall of Napoleon, were now proposing to assist Spain to recover her American colonies. This would mean a restoration of the old colonial restrictions on trade with South America — restrictions which had been removed when the South Americans had won their independence. A second circumstance was the threat of Russia on the Pacific coast. Here an imperial edict had attempted to close to all but Russians the western seas north of parallel 51°. Russian traders were also pushing

down the coast and had penetrated as far as northern California.

It was under these circumstances that the famous Monroe Doctrine came into being. The principles then asserted were (1) "that the American continents . . . are henceforth not to be considered as subjects for future colonization by any European power," (2) that any attempt by Europeans to impose their systems of government upon any part of this hemisphere would be considered dangerous to the peace and safety of the United States, and any interference with the new republics of the South American continent would be looked upon as a manifestation of an unfriendly disposition toward the United States, (3) that it always had been and should continue to be the policy of the United States not to interfere in matters that are strictly European. In other words the Monroe Doctrine was a warning to Europe not to meddle in the Americas, and was a promise on the part of the United States to keep out of European entanglements. The latter part of this policy, it is well to note, was but a restatement of a principle adopted at the very beginning of our national existence. It was first stated by Washington in his proclamation of neutrality when the European wars began in 1793, and again in his farewell address in 1797, when he said: "It is our true policy to steer clear of permanent alliances with any portion of the foreign world." The same principle was enunciated by Jefferson at his first inaugural in the words: "Peace, commerce, and honest friendship with all nations, entangling alliances with none."

It should be noted that while the Monroe Doctrine had much that was political at its foundation, there was likewise a great deal that was economic. There was first the question of future expansion, of the further extension of the frontier under the auspices of the United States until it should reach the Pacific. At that time, to be sure, we did not have Oregon or California. The Monroe declaration, however, is sufficient indication that we were already looking that way. In the second place, there was the question of the freedom of the seas, a principle with

which the Russian edict clashed. Thirdly, there was the question of the South American trade. This had been opened up with the collapse of the Spanish power and the removal of her restrictive laws. American traders were in no mood to let the new opening slip away from them. There was also, it is true, a strong sentiment in favor of the South American republics merely because they were republics, which we then supposed would develop into systems of government somewhat like our own.

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QUESTIONS

1. What delayed the rise of large-scale manufacturing in the United States after the Revolution?

2. Why was England able to undersell competitors, and keep up with the world's demand for manufactures after 1760?

3. What relations do the following considerations have to manufacturing: capital, labor, raw materials, markets, machines, transportation? Could any of them be eliminated in large-scale manufacturing? Which is the most influential in inducing men to undertake manufacturing?

4. As to the topics named in the preceding question, show what changes had taken place in the United States between 1790 and 1812.

5. What effect do frontier conditions have on manufacturing? On the standard of living? (See CALLENDER, *Economic History*, 652-658.)

6. Why were the Northeastern states less willing to go to war in 1812 than the Western states?

7. Was it the "natural course of things" that England should do the manufacturing and the United States furnish the market for the goods?

8. How could the large factories compete with English manufactures, which had shortly before overwhelmed the smaller mills?

9. How did the farmers north of the Ohio expect to benefit by the growth of manufactures in the Northeastern states? Would the cotton states benefit equally? Was the development of the three economic sections responsible in any way for the establishment of economic independence?

10. Is it wise to stimulate any industry by artificial means such as a protective tariff, or would it be better to let industries grow where naturally favorable conditions supply the stimulus? Which had the greater influence, the three different economic sections, or the tariff, in encouraging American manufactures after 1810? Can politicians who are nothing else make good tariff laws? Is it possible to make a tariff law in the United States that does not favor some special interest?

11. What were the provisions of the tariff of 1816? What were the political considerations connected with the act of 1828? What were the provisions of the law of 1833?

12. What were the circumstances which called forth the Monroe Doctrine? What was the doctrine? Was it something new? What connection did it have with our economic growth? Is it a part of international law?

13. Summarize all the instances that you have found thus far in the text which seem to show that economic interests largely control political policies in the long run.

SUGGESTED QUESTION FOR DEBATE

1. Resolved that the settlement of the West and the Southwest had more to do with the establishment of manufacturing in the East than any form of artificial stimulus, such as an embargo or the tariff.

CHAPTER XI

TRANSPORTATION AND THE DEVELOPMENT OF A DOMESTIC MARKET, 1789-1840

Introduction

Trade conditions

The lack of adequate produce markets

The lack of transportation facilities

The Cumberland Road

Early river traffic

The results of poor transportation service

The quickening of trade

Cotton raising

The steamboat

The increase of population

The domestic market

Industrial and commercial development of the Northeast

Three economic sections

The canal era

Early railroads

Summary of the era of transition

Introduction. — The same spirit which brought men to America later impelled them to move ever farther and farther into the West, always cheerfully and eagerly pressing on to unknown labors and perils for the sake of the future. The difficulties and the dangers were similar, and often equal, to those endured by the early colonists. For years the pioneers faced the perils of Indian attack. Thousands, settled by force of circumstances along the rivers, were made helpless by malaria. Their lives spent in building homes and clearing their farms in the wilderness were hard and lonely.

Trade conditions: *The lack of adequate produce markets.* — Besides the dangers of pioneering, the settlers had to put up

with many discomforts, primarily because they were not able to sell their produce at a profit, and, therefore, could not buy even ordinary necessities of life. In the first place, there was, until after about 1815, insufficient demand for what they had to sell. We should remember that the Eastern states and likewise the nations of Europe were still mainly food-producing, instead of food-buying communities. Even England, the greatest manufacturer of them all, still felt it necessary to restrict the importation of cereals in the interest of her landlord class. Throughout colonial days, and for a long time afterward, the West Indies were our best market for such commodities, but they, of course, could take only a small fraction of what we could produce after the opening of the West. By 1820 our grain production had increased sixfold over what it had been in 1790, but our foreign exportation had grown very little.

The lack of transportation facilities. — In the second place, transportation facilities were so poor that it would have been difficult to sell farm produce at a profit, even had the demand been much greater. Before this obstacle could be removed, roads, canals, and, finally, railroads had to be built. All this, however, required capital in the form of money or credit, neither of which could be had until goods of actual value could be offered in exchange. It was the lack of capital which explains the unsound banking and the paper money to which the Western states resorted during this period (p. 121). Their salvation from 1790 to 1820 lay in the natural outlets furnished by the Mississippi River and its tributaries. Through these highways they began the foundation of their economic freedom.

The Cumberland Road. — And yet, in the early days of settlement beyond the mountains a danger to the Union lurked in the rivers, for they led away from the seaboard and directly to the Spanish domains in the South. Had the Spaniards not foolishly interfered with the Westerners' use of the Mississippi, it might easily have been difficult for our government to retain their allegiance. Washington had foreseen this danger,

and after his return from an inspection of lands which Congress had granted him along the Ohio, he had urged the state of Virginia to build a road across the mountains. "The Western settlers," he wrote, . . . "stand as it were upon a pivot. The touch of a feather would turn them any way."¹ Although Virginia did not follow this advice, the Cumberland Road, or National Turnpike, was begun by the federal government in 1802. For its construction Congress voted one-twentieth of the income from the sale of public lands. The road began from a point on Braddock's Road in Pennsylvania, and was gradually extended until it reached Vandalia, Illinois. Its further extension was abandoned at that point, as the states themselves had taken up the work of road construction, and other modes of communication with the East were rapidly coming into use. Although overland transportation was too expensive for the growth of a great commerce, the Cumberland Road served as an important highway for travel to the Western country and for intercommunication across the mountains.

Early river traffic. — The bulk of the commerce of the West was in the early years done by way of the rivers. The craft used were the raft, the flatboat, and the barge. On these was loaded the cotton of the planters to be floated down the rivers to New Orleans, and from there shipped to the East or to Europe. From the territory along the Ohio came wheat, flour, corn, pork, and bacon, besides hay, lumber, and iron. This traffic, however, went almost entirely in one direction. The barges and the rafts went down the rivers easily enough, but they could only with great difficulty be brought back. While it took but thirty days to float from Louisville to New Orleans, it required ninety of hard work to return. In 1816 there were five hundred and eighty-four barges and twelve hundred and eighty-seven flatboats engaged in the river trade, yet immediately prior to that time only twenty of the largest barges were required to take care of the freight going upstream. Most of the cheap and rudely built carriers were, therefore, sold

¹ *Writings*, X, 408.

at New Orleans, while the boatmen made their way back by land, or by sea to an Eastern port and from there over the roads home.

Results of poor transportation service. — In selling produce the settlers were pinched by the transportation charges. If they sold their goods to the planters, these charges were not excessively high. But, until after the War of 1812, the New Orleans market was small, as the total population of Louisiana and



NAVIGATION ON THE OHIO; CINCINNATI IN 1810

In addition to being the pork-packing center of the West, Cincinnati early became and long continued to be the manufacturing center for articles needed in the country, such as household utensils, farm tools, boots and shoes, and clothing. In addition, it became the shipping point of produce which was floated south on the river, and the gathering place of thousands of immigrants on their way to the interior of the Western country.

Mississippi in 1810 was under one hundred and seventeen thousand. If the produce went farther — to the West Indies, the Eastern cities, or, perchance, to Europe — it met increased charges as well as the competition of foodstuffs raised nearer home.

When the farmer was buying goods in foreign markets his disadvantage was even greater, for the river then ceased to

be his ally. Carrying goods upstream cost from six to nine cents a pound. Almost everything coming in from foreign lands or the East, therefore, was brought overland, and in 1817 it was costing seven dollars per hundred to transport goods from Philadelphia to Pittsburgh. Consequently, for a long time it was extremely difficult to get imported articles. Many things which we now look upon as ordinary conveniences, or necessities, were impossible luxuries to the Western settlers. Moreover, because of the lack of money and credit in the West, the Eastern manufacturers made little effort to create a market there until after 1820. And yet as early as 1810 there were a million people in the Western states eager to buy Eastern manufactures, had it been possible for them to do so.

It can easily be seen that cash was a thing that the settlers rarely handled. Nevertheless, for some articles, such as tea, coffee, leather, iron, powder, and lead, the country store would accept nothing else. In 1825 a farmer on the Ohio would sell wheat for fifty and corn for twenty-five cents a bushel. If he lived twenty or thirty miles from the river, as was often the case, the expense of carting would be twenty-five cents a bushel, so that from the wheat he would net twenty-five cents a bushel, and on the corn he would come out even, to say nothing of his labor. Tea cost him from three to four dollars a pound, and homespun woolen cloth from a dollar and a quarter to a dollar and a half a yard. The pound of tea would equal the value of all the wheat that could be raised on an acre of land.

Just as in colonial days, therefore, many a Western farm became a little world unto itself. Upon it would be produced almost all the things necessary to life. Clothing would often be provided all the way from the production of the wool to the making of the garments. By home industry the buildings were erected and afterward furnished. In this manner the settlers managed to live in rude comfort. Many got into hard straits, however, for the lack of money. But for special acts of grace passed by Congress, many a farmer would have lost

his farm and the improvements made through years of hardship, because he could not get the necessary amount of cash to pay the government for the land upon which he had settled.

The conditions also affected the character of agricultural production. Since wheat and corn could not be sold, the farmers turned their attention to other lines in order to secure a little ready money. Whiskey made from the cereals possessed the advantage of having a ready market as well as a value great enough to bear transportation charges. From October, 1810, to May, 1811, nearly sixteen thousand barrels were sent down the rivers to New Orleans. Live stock took care of its own transportation. Therefore, large numbers of hogs, cattle, horses, and mules were raised. Cattle and hogs roamed at will and picked up a living as best they could. An early Ohio settler described the hogs as being "active, enterprising, and self-reliant."¹ Large droves of animals passed yearly over the Cumberland Road from Ohio to the Eastern market. Through the mountain passes cattle and mules were driven from Kentucky and Tennessee to the planters of Virginia and the Carolinas. In 1828 over one million dollars' worth went through the Cumberland Gap to these states.

Hemp, tobacco, and sugar cane were other early money producers, because they possessed high value in proportion to bulk, and because they commanded a ready market. Almost from the first hemp had been raised in Kentucky, and its production increased as the years went by. It resulted in an important manufacturing industry in cordage and bagging in this state. Between 1810 and 1820 tobacco raising in Kentucky and Tennessee grew to be an important industry. In Louisiana during the same time, cane-sugar production increased rapidly.

The quickening of trade: Cotton raising. — The cotton of the South helped to solve the problems of cash for the farmers

¹ Howells, W. C., *Life in Ohio*, 1813-40, p. 64.

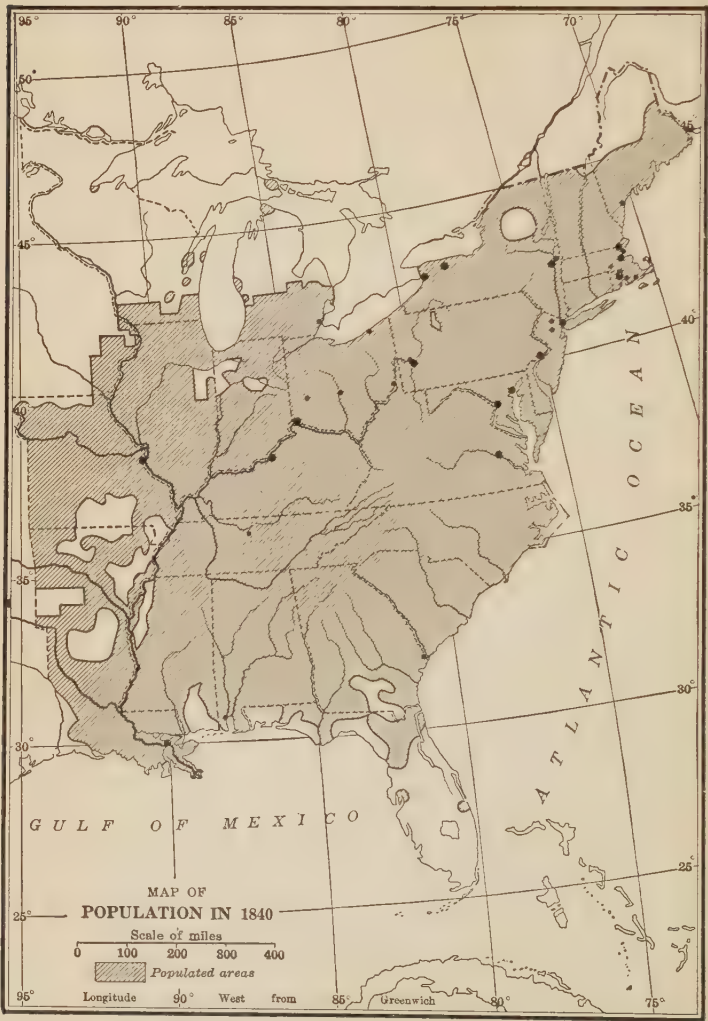
of the Mississippi Valley. From 1790 the demand for this commodity had grown rapidly, and was greatly accelerated by the ending of the war in Europe in 1815. Now, of all the regions of the world capable of its production, the South was in the best position to take advantage of the increasing demands. The production of the short-fibered upland cotton had been made profitable by the cotton gin. Because of this invention, cotton raising, which had been confined to the long-fibered plant grown only on the low lands along the coast, could now be extended over an indefinite area. Of the rest of the world, India alone furnished any serious competition. The Southern states, moreover, were fast passing into the hands of an aggressive white people. The lands were fresh and rich. In the negro slaves there was a supply of labor that could be organized for the work of large plantations, then believed to be the cheapest method of cotton production.

The consequence was that within twenty years after the end of the European wars, the South had secured the major portion of the world's cotton market. According to an estimate made by the Secretary of the Treasury in 1836, the crop of the United States, which, in 1811, had been but fourteen per cent of the world's production, had, by 1834, become over fifty per cent of the total. To secure such a world-wide monopoly, and then to hold it, the Southern planter had constantly to increase his production. In South Carolina the plantation began to supplant the ordinary farm between the years 1790 and 1810. In Georgia population spread rapidly over the unsettled parts of the state, and soon there was a clamor for the removal of the Indians. At the same time people began to push into Alabama, Mississippi, and Louisiana, and by 1820 this movement had become a rush for the choicest cotton lands of the region.

The steamboat. — Meanwhile, a revolution in transportation was taking place. After 1816 regular steamboat navigation of the Western rivers began, bringing with it the doom of the flatboat, raft, and barge. By 1840 four-fifths of the traffic of

the Mississippi Basin was monopolized by the new agency. Steamboats were more rapid than the barges, and they could go up as well as down stream. They gradually increased in size until the largest ones reached from two hundred to two hundred and fifty tons burden. The former freight rate of from six to nine cents per pound from New Orleans to Louisville and Cincinnati was reduced to about one-half cent in 1835. Furthermore, the risk of loss was greatly lessened, as it has been estimated that twenty per cent of the barges and flatboats were sunk by snags or other impediments. The result was an enlargement of the trade between the Southern ports and the Northwest, although much the greater part of the imports to the upper Mississippi Valley still came in by various routes direct from the East. Only such articles as sugar and molasses, which were made in the South, came in greater quantities from New Orleans than from the Eastern ports.

The increase of population. — What had been a steady growth of population up to about 1820 began to take on almost miraculous rapidity. The rivers, the barge and raft, and then the steamboat; the money crops of the North, and above all, the cotton of the South brought the people rushing in ever greater numbers into the West. The combined population of Alabama, Mississippi, and Louisiana grew from 356,756 in 1820 to 1,318,818 in 1840, an increase of 350%. In the same time Illinois rose from 55,211 to 476,183. People spread rapidly across the Mississippi, up the Missouri, and into Iowa, Arkansas, and Texas. Meanwhile, they themselves were providing their own market — the Southern planters for the food, animals, bagging, and machinery of the North; the Northerners, although to a far less degree, for the sugar and molasses of the South. The cotton went to Europe and the Eastern manufacturing states. In return cash poured into the South, and thence much of it found its way to the Northwest in return for its produce and supplies.



STEAMBOAT TRAFFIC ON THE MISSISSIPPI TO 1860

YEAR	STEAMBOAT ARRIVALS AT NEW ORLEANS	TONS FREIGHT	VALUE
1814-15	40	77,220	
1824-25	502	176,420	\$19,044,640
1834-35	1,005	399,900	37,566,842
1844-45	2,530	868,000	57,199,122
1854-55	2,763	1,247,200	117,106,823
1859-60	3,566	2,187,560	185,211,154

The domestic market: *Industrial and commercial development of the Northeast.* — Meanwhile, as we have seen, the Northeast was turning more and more from the household and domestic systems of manufacture to large-scale production in factories. These changes were working a revolution in the habits of the people. Those who did not go west began to move into the cities. In spite of emigration, the population steadily increased between 1820 and 1830, although far less rapidly than it had done in the West. The cities and towns, however, were beginning to grow rapidly, and new manufacturing towns were springing up almost yearly. It was but the beginning of the great transformation that was to take place, as we shall see later, in all parts of the country, as the open places became populated.

A gradual decline of food production marked the changes taking place in the Northeast. More and more this region called for its sustenance upon the rich lands of the Ohio and Mississippi valleys. At the same time it furnished a greater and greater market for the cotton of the South. Ocean commerce, likewise, was taking the energies of a growing number of its people, while many others devoted themselves to the financing of the Western and Southern crops and the multitude of new enterprises that were under way. Already by 1840 New York City was the financial center of the nation. The point to be noted here, however, is that all this took men

from agriculture, and made them buyers of food and raw materials.

Three economic sections. — By 1820 we have an ideal condition for trade — a large manufacturing, commercial, and financial population in the East ready to trade its manufactures and its carrying and financial services for food and raw materials. We have also the Northwest and the South, with great surpluses of food, cotton, lumber, and other raw materials, as eager to trade them for the manufactures and the other resources of the East. But one handicap remained — the lack of transportation facilities binding all together. In order to transport goods from one point to another perhaps five hundred miles apart, a river and ocean route of two or three thousand miles, or else a slow and expensive overland trip, had to be covered. For this reason it happened that the voice of the strong interests of the East was joined to the clamor of the West for cheaper communications between the two. In response to this united demand the canal era began.

The canal era. — Between 1817 and 1825 the Erie Canal was dug. The work was done by the state of New York, which had begun to fear that the growing lake commerce would be diverted to Montreal. The success of the undertaking was instantaneous. By 1830 freight rates from western New York to New York City were reduced ninety per cent, and tolls to the annual value of one million dollars were being collected. The value of the farms along the way soon doubled and quadrupled.

To compete with the Erie, Pennsylvania built a canal from Columbia on the Susquehanna to Hollidaysburgh at the foot of the mountains. West of the range a continuation ran from Johnstown to Pittsburgh. Over the mountains a portage railroad connected the two sections. This work was completed in 1834. Meanwhile, the city of Washington and the state governments of Maryland and Virginia and their people had combined to build the Chesapeake and Ohio Canal from Washington up the Potomac to Cumberland.

As the Eastern canals were proving their worth, the people of the West soon began to profit by the example. The Ohio Canal, extending from the mouth of the Cuyahoga River on Lake Erie to Portsmouth on the Ohio, was the first of the Western waterways to be completed. Another was soon dug from Cincinnati via Dayton to the Maumee River. The Wabash and Erie, extending from the Maumee to the Wabash River, was built jointly by the states of Ohio and Indiana and was completed in 1848. In 1836 Illinois also projected a canal to run from Chicago to the Illinois River. These were the principal undertakings which made through connections between the river systems of the South and the lakes of the North.

The work of canal construction was financed almost wholly by the states through the sale of lands given them by the federal government for the purpose, and by the issuance of bonds. Other lines would have been built but for two events, one of which interrupted, and the other made unnecessary, the further construction of the waterways. The first of these events was the financial panic of 1837; the second was the coming of the railroads.

During the panic, as we shall see, business and banking institutions all over the country failed in large numbers, involving many people in the ruin. Money became very scarce, and new enterprises, including those of a public nature, had to be abandoned for the time. Hence, for a number of years the building of canals, even of those which had already been begun, was suspended.

Early railroads. — After the business world had righted itself, several of the partially constructed canals were completed, but the old enthusiasm and energy in this work had gone, never to return. The failure of the canals to come back is explained by the advent of the railroads.

The decade from 1830 to 1840 saw the beginnings of steam railroading in America. Experiments to determine the best kind of power had been carried on for some years. The first use of the locomotive steam engine was made in 1831 on two

widely separated lines. One was the Baltimore and Ohio, on a stretch of thirteen miles between Baltimore and a point on the Potomac; the other was a line running from Charleston, South Carolina, to Hamburg.

Following these experiments many other short lines were built in the seaboard states. It should be clearly understood that the builders of these lines had little idea of the development which the railroads would afterward take. Those built during the first ten years were intended, as a rule, to be feeders of the canals and other water routes. For example, short lines were run from Boston to Worcester, Lowell, Portsmouth, and Providence, to tap the country round about for the ocean traffic. Similar short lines ran out from New York and Philadelphia. By 1840 lines connected Albany on the Hudson with the interior of the state as far as Syracuse. In the West just a beginning was made in this period — two or three short lines running from the interior of Ohio and Michigan to Lake Erie. By 1840 one could go by rail almost the entire distance from points in Maine to Wilmington, North Carolina.

In this way the early railroads were built piecemeal by dozens of different companies. No company's line at first was more than thirty or forty miles long. We may, perhaps, best get an idea of what traveling on them was like by comparing them with the present-day interurban trolley systems. A journey of any distance meant endless changes, whether for freight or passengers. The modern trolley lines, moreover, are far more luxurious than were the early railroad trains. The trolley cars are much heavier and larger, and their speed is oftentimes much greater. The engines of these early trains were very small, and their power was limited. Trains sometimes would be held up by a brisk wind. The tracks were narrow, poorly laid, and exceedingly unreliable. The gauges adopted by different companies varied, so that the cars of one line could not run over the tracks of another, and even if the gauges had been uniform, the companies were too jealous of one another to permit an interchange of cars.

Summary of the era of transition. — When, in 1763, the Seven Years' War came to an end, there began the chain of events which was to transform the English seaboard colonies into the United States of America. Between the years 1763 and 1770 the real American Revolution occurred. It was after the attempts of England further to restrict the activities of the colonists, and especially after her attempts to impose and collect new forms of taxes, that the attitude of the colonists toward England underwent a vital change. When they had finally made up their minds not to permit further interference with their affairs, the revolution was accomplished. The acts of violence and the war which followed were but convincing proof that the revolution had taken place. The final result of the revolution and the war was the establishment of political independence in 1783.

During the same years that the revolution in thought was taking place, an unheralded movement of as great importance was beginning. This was the movement of the people of the southern Appalachian foothills across the mountains into the Great Valley to the west. In this crossing lay the germs of future economic independence and national unity; for ultimately it was to result in the turning of the thoughts and the interests of all the people away from Europe to the more alluring and more promising tasks of developing the home markets and the resources of the nation.

Political independence brought its problems. The people had to learn how to govern themselves, — how to get along with one another. These problems happily were solved when the Constitution was substituted for the Articles of Confederation. The new nation also had to learn how to deal with foreign nations, whose bullying it had meekly to endure for many years. Nevertheless, one can see the nation and the people steadily following a policy which eventually was to win for the one the respect of foreign powers and establish the other economically in a firm position upon their own resources.

Realizing the value of national credit, the government, after the adoption of the Constitution, at once made provision for the payment of its debts. In order to establish stable conditions at home, a national currency was provided for, and attempts were made to create a sound system of banking. Encouragement was rendered to popular expansion through the acquisition by the national government of the claims of the states to the Western lands, by the establishment of territorial governments, and by the sale of the lands to private individuals.

Meanwhile the people were not idle. In spite of foreign insults and aggressions, American ships began to sail the seas, and established almost a monopoly upon the world's carrying trade while Europe was at war. When the Embargo ended these activities, with no less enterprise capital turned to manufacturing for the isolated home market, and by the end of the wars had established the factory system in America.

More important still were the migrations of the people to the West. All along the Appalachian barrier they were hastening to take up the cotton lands of the South, the tobacco and hemp lands of Kentucky, the forest lands of Ohio, and the prairies of Indiana and Illinois. By 1820 they were crossing the Mississippi into the Louisiana lands, acquired in 1803, and their aggressiveness had compelled the Spaniards to transfer Florida to them. Within a period of fifty years the eastern Mississippi Valley had been occupied, the pioneer stages of its development had been accomplished, and many communities were taking on a settled appearance.

The development of extensive manufacturing in the East and the settlement of the Mississippi Valley ended the colonial conditions of economic life. The South and the West were producing an abundance of cotton and food for the East; the East was manufacturing. Steamboats on the Mississippi, the Ohio, and the Great Lakes; the Erie and other canals; the railroads; the protective tariff; and the declaration of American principles in the Monroe Doctrine wiped out the last vestiges of colonial dependence upon Europe. Henceforth the

people were a united people, and the United States became in truth a nation "great, free, powerful, and independent."

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QUESTIONS

1. Why were the farmers of the Northwest unable to get good prices for their produce?

2. What effects did the Appalachian Mountains and the direction of the flow of Western rivers have upon the loyalty of early Western settlers to the United States? Was the importance of the Cumberland Road chiefly political or economic?

3. Give an account of early river traffic. What were its disadvantages?

4. Show how transportation difficulties handicapped the Western farmer in trade with the East and with Europe. Mention the conditions on the farm in Ohio in 1810 which seem to resemble conditions in Massachusetts in 1650. Was Massachusetts in any way more favorably situated? How did conditions of transportation affect the character of farm produce in the West?

5. Enumerate the advantages of the South for cotton raising. Why was it easier to make a fortune from cotton than from wheat? What effect did cotton have upon migration? Upon population? In what ways did cotton help to solve some of the difficulties of the Northwest?

6. Describe the revolution wrought by the steamboat on Western rivers.

7. What changes were going on in the Northeast while the migrations to the Northwest and the Southwest were taking place? Did cotton have any connection with these changes? How did the changes affect the Northwest?

8. Describe the principal canals built between 1816 and 1837. How were they paid for? What caused canal building to cease?

9. Where were the earliest railroad lines? What were the purposes of the early roads? Where were most of the lines built between 1830 and 1840? Describe their equipment.

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the isolation of the Western communities in 1810 was more pronounced than that of the colonies in 1650.

2. Resolved that cotton has had a greater influence in American history than corn.

PART III. NATIONAL CONSOLIDATION AND ISOLATION

CHAPTER XII

MANUFACTURING FOR THE DOMESTIC MARKET, 1816-1860

Introduction

Growth of the textile industry

 The power loom

 Hand-loom weaving

 Knitting by power

 Woolen mills

 The turbine wheel and the ring spinner

 Character and extent of the domestic market

The manufactures of leather

Revolution in the organization of shoe manufacture

 Influence of a widening market

 Boot and shoe "factories"

 The advent of shoe machinery

Early iron regions

Primary processes in the iron industry

 The blast-furnace methods

 Growth of pig-iron production

 Progress in refining

 Steel manufacture

Reproductive processes in iron working

 Casting and forging

 Automatic machinery

 Standardization

 Interchangeable parts

 Specialization

 Rolling

Influence of agriculture and the forests

 Farm machinery

 Flour manufacture

 Lumber

 Meat products

Financing the great industries

Corporate organization

Character and powers of corporations

Increase in the number of corporations

The tariff, 1842-1860

Introduction. — We are now prepared to consider the growth of large-scale manufacturing which resulted from the establishment of the three economic sections, the increase in population, and the development of transportation. With the rapid growth of the West and the South the manufactures of the East kept pace. In the West also manufacturing had by 1860 begun to absorb the energies of many people, and after that date it increased more rapidly with every passing year.

Growth of the textile industry: *The power loom.* — We have seen (p. 152) that the growth of cotton-yarn mills had at first resulted in a large increase in the number of hand-loom shops where the yarn was woven into cloth. Yet immediately after the end of the War of 1812, a system of textile manufacture had been introduced which meant ultimately the passing of the hand-loom weaver. In 1814 the power loom, which had been for some time in use in the English mills, came also to America. In that year the first one was perfected by Francis C. Lowell, who had made a close study of the English textile industry, and soon a factory was built at Waltham, Massachusetts. The methods introduced by Lowell, however, differed in some respects from the English system. In England the weaving and spinning always had been done in separate mills. Backed by Boston capitalists, Lowell built his Waltham factory, and included within it not only power looms of the English model, modified by his own ideas, but also machinery for carding and spinning. This is said to be the first instance of a mill in which the entire process of cloth making was performed under one roof. The new factory at once proved successful.

A few years later the same Boston capitalists secured large water-power sites on the Merrimac, where Lowell now is, and began the building of factories there. The first was completed

in 1823. During the next decade other large enterprises began along the Merrimac at Nashua and Manchester, New Hampshire, and at Lawrence, Massachusetts. Large mills were built at Dover, New Hampshire; Saco, Maine; Fall River and Chicopee Falls, Massachusetts. Meantime many smaller plants were established in Rhode Island and Connecticut.

Hand-loom weaving. — Along the Delaware in eastern Pennsylvania and in New Jersey there was also rapid growth. Philadelphia hand-loom weavers took the yarn from thousands of spindles in the vicinity. Philadelphia became the center of the production of fancy and special designs — an art in which the machine could not so easily displace the hand. Hence, in this city the hand-loom weavers lasted until after the Civil War, although in New England they had long before been displaced by the power loom.

Knitting by power. — On the Hudson and the Mohawk rivers, in the meantime, cotton manufactures had taken another form. In 1832 at Cohoes, New York, power knitting mills had been set up — the first in the world. Here began the process of removing from the household the industry of knitting socks and mittens. These mills also began the making of knit underwear, an entirely new kind of clothing. It was not long, however, before it had come into common use.

Woolen mills. — About 1820 the manufacture of woollen cloth likewise began to be carried on in the factory. Woollen manufacture did not grow as rapidly as cotton, however, partly on account of the popularity, cheapness, and abundance of cotton. Nevertheless, during the European wars, the woollen industry had been greatly stimulated by the introduction of merino sheep from Spain and Saxon from Germany. The farmers of the West, especially those of Ohio, took up the raising of these breeds, and the flocks grew rapidly.

The turbine wheel and the ring spinner. — After 1816, with but trifling interruptions, the textile industry was protected by a tariff, so that it was untroubled by excessive foreign competition. More effective than tariffs, however, were certain im-

portant labor-saving inventions. Among these was the turbine water wheel, which added twenty-five per cent to the efficiency of water power.

A second invention of great importance to the American industry was the ring spinner, which was perfected during the 'thirties. This device was especially adapted to the spinning of yarns suitable for the fabrics most in demand in America. It would spin much faster than the mule, the machine used by the English, but the yarn was coarser and harder. It was just the thing for the plain goods taken by the American market. Its effect was greatly to reduce the labor costs of production and, therefore, to enable the American manufacturers to meet the competition of the more cheaply paid labor of England and the continent of Europe.

Character and extent of the domestic market. — The character of the rapidly expanding domestic market was also taken advantage of by the American manufacturer. It was a peculiar market, demanding inexpensive fabrics and caring little for fine cloths and fancy designs. Plain sheetings and simple standard prints are examples of the goods most in demand. For the manufacture of such staples the American factory was well fitted. The ring spinner was, as we have seen, especially adapted for the purpose. Moreover, the plain goods could be turned out by the thousands of yards without stoppage or change of machinery. English manufacturers with their world market could not concentrate on a few standard makes, but had to vary their output to meet the demands made upon them. Hence, the American manufacturers were easily able to hold their own in the market which they chose to supply — the vast and growing home market, which had formerly been supplied by the simple homespuns of the household.

The remainder of the story of the textile manufacture up to 1860 becomes merely statistics of enormous increases in the quantity of production, mainly of cotton goods. By 1860 cotton cloth had become so cheap — calico, for instance, having fallen from an average of about thirty-five cents a yard in 1810, to

about ten cents in 1860 — that Americans were using six times as much per capita at the latter date as they had used in 1815. It had displaced linen, the standard cloth of the household manufacture. Most of the increased demand was supplied by the American mills. The five hundred thousand spindles of 1815 had grown to five million two hundred thousand in 1860, and the amount of raw cotton used from five million pounds to four hundred and twenty-three million pounds.

Manufactures of leather. — This country from the earliest times had become practically independent of foreign supply in the matter of leather and leather goods. As in colonial days (p. 79), small tanning enterprises followed the spread of population in later times. Leather could be made more economically here than in England on account of the cheapness and abundance of both hides and tanning bark. In 1810 hides cost in England seven cents a pound; in the United States five cents. Moreover, the bark cost the English almost as much as the hides, while in the United States it cost only one-tenth as much.

The result was that we exported these commodities from the earliest days, and imported but little, except of the finest sorts. Our principal manufactures were harness and saddles, and boots and shoes, in all of which the product more than met the home demand. Of boots and shoes we exported over one hundred and thirty-five thousand pairs in 1810.

Nevertheless, the industry was unaltered by machinery until the Civil War. Up to that time it remained a handicraft. Improvements in labor-saving tools and machines were few. The shoemakers of 1840 were using the same tools that were used throughout colonial days.

Revolution in the organization of shoe manufacture. — Important changes were made in the method of production, however. The colonial village shoemaker, who, with an apprentice or two, made shoes on order for the community, continued his work after independence had been won. But changes in organization were made which as completely revolutionized this industry as machinery had others.

Influence of a widening market. — These changes were made necessary as transportation facilities brought distant markets nearer, thereby compelling manufacturers to devise methods for production in great quantities. For the widening market standard lasts and a greater variety of styles and qualities had to be developed. To hasten the work and keep down costs, a more minute division of labor was little by little introduced, and the custom of letting out parts of the work became established.

Boot and shoe "factories." — Out of the demands of the market, therefore, there developed shoe factories without machinery. Such a factory consisted of a main shop and many smaller ones. The main shop, where the cutting was done, grew larger and larger and kept busy an increasing number of men. By 1850 it had developed into a factory containing the cutting rooms, stock rooms, packing and shipping departments, and offices. Division of labor had by this time separated the workers into special groups, each occupied with its particular task. Of these the most important were the cutters of soles and uppers, the stitchers and binders, and the lasters and solers. In small shops scattered throughout the town might be found the "out-workers," those who did certain of the operations on contract. The increasing size of the industry demanded a corresponding increase in capital. The proprietor became less and less a shoemaker and more and more the manufacturer, salesman, and employer of labor.

The advent of shoe machinery. — The constant division and redivision of the work made increasingly apparent the need of bringing the workers all together in order to avoid the cost of sending the work from one group to another. Soon after 1860 the movement began. The sewing machine and other revolutionary inventions took over almost all the processes formerly done by the out-workers, and thus hastened the migration to the factory. Power was applied to the machines, and they, together with the workers, were brought under a single roof.

The early iron regions. — Early in the nineteenth century

concentration in the iron industry had taken place in certain favored localities. The most prominent were western Massachusetts and Connecticut, eastern New York, eastern Pennsylvania and New Jersey, with extensions into Maryland and Virginia, western Pennsylvania around Pittsburgh, and a region



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A CHARCOAL BLAST FURNACE OF 1827, NEAR READING, PENNSYLVANIA

Transportation of all material had to be done by cart or on horseback. Double bags with an equal weight of pig iron in each were slung across a horse's back and often transported for many miles.

along the Ohio River in Kentucky and Ohio. These concentrations depended upon the existence of large ore bodies, but those of Pennsylvania were the most important and were favored by the proximity of coal.

Primary processes in the iron industry: *Blast-furnace methods.* — For many years our methods of production were primitive. Long after England had begun the use of coke in smelting, we continued to use charcoal, owing to the abundance of wood. In the United States the use of coke in smelting was

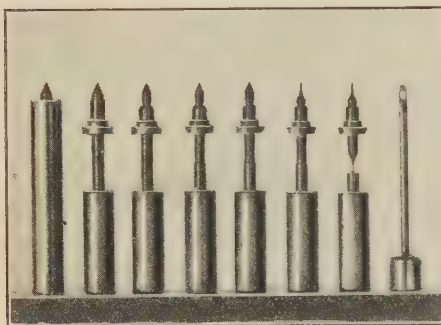
practically unknown until after 1850. Between 1830 and 1840 a substitute for charcoal was found in anthracite coal. This fuel had not been available earlier because it had been impossible to secure a draft that would cause it to burn with sufficient heat for smelting. It became possible to use anthracite through the discovery by James B. Neilson, a Glasgow Scot, that a hot blast in the furnace produced with less fuel a much higher temperature than could a cold blast. After 1839 anthracite was more and more used in the Pennsylvania furnaces, and by 1855 the amount of pig iron produced by this fuel surpassed that produced by the charcoal method.

Growth of pig-iron production. — The hot blast, the growth of population, the building of railroads, and the manufacture of tools and machinery led to a rapid growth in the manufacture of pig iron. The quantity produced increased enormously during the first seventy years of our national life. The few thousand tons output in 1790 had become over one hundred and sixty-five thousand tons in 1830; five hundred thousand tons in 1850; and eight hundred thousand tons in 1860. With the exception of flour, its value was at the end of the period greater than that of any other manufacture.

Progress in refining. — The removal of destructive foreign substances, such as carbon, sulphur, and phosphorus, was commonly done in the early days by repeatedly heating the pigs and drawing them out into bars on the forge. This method of refinement, although slow and costly, was adhered to for many years after the century began. In 1817, however, the puddling and rolling process came from England to the United States. This process consisted of heating the pig iron to a pasty mass in the furnace, where it was constantly kneaded by the workmen, and then running it through grooved rollers, which squeezed out much of the remaining foreign substances.

Steel manufacture. — Steel production is a more delicate operation than is that of producing pig and wrought iron. Before 1860 we had made little progress in its manufacture. In large measure we depended upon England for this product. It was

not, indeed, until after 1860 that the world began to wake up to the fact that the iron and steel industry should be founded upon the chemical laboratory. Few people had even a vague understanding of what had really happened when a piece of raw iron had become transformed into steel. It was not until they began to look for and discover what changes had really taken place, that a great development in steel making was made possible.



Courtesy of the Waltham Watch Company.

WATCH BALANCE STAFF AT SUCCESSIVE STAGES OF DEVELOPMENT.

The machine begins on a cylinder of steel like the figure at the left, and successive operations result in shapes like the figures to the right until the final shape is produced. These figures are much enlarged. At extreme right is a picture of the smallest needle made, enlarged as many times as the figures to the left are larger than the original.

at all kinds of labor-saving processes. Rapid improvement in iron rolling was also made, especially after the railroads began the use of the iron rail.

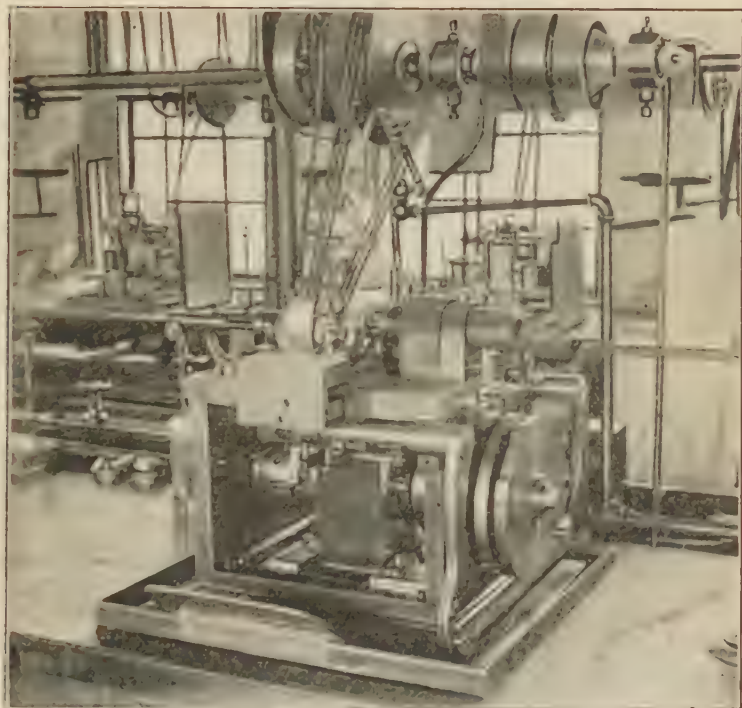
Casting and forging. — About 1830 stoves had been invented for the burning of coal. The result was that a great demand arose for them all over the country. The parts of the stoves were made of cast iron. Between 1830 and 1860, therefore, we find large manufactories situated at places most convenient to the market, such as Providence, New York, Philadelphia, Buffalo, Pittsburgh, Cincinnati, and St. Louis. By 1850 about four

The science of metallurgy has grown up in the last sixty years, and with it has come the age of steel.

Reproductive processes. — While we lagged somewhat in the science of refining, much ingenuity was displayed in working up the raw material into commercial products. Great advances were made in the arts of casting and forging, in the invention and improvement of machine tools, and in putting them to work

hundred and seventy-five thousand stoves were being sent annually from these cities.

The invention of the sewing machine also led to improvements in the arts of casting and forging. In the simple homes



Courtesy of the Waltham Watch Company.

THE BALANCE STAFF LATHE

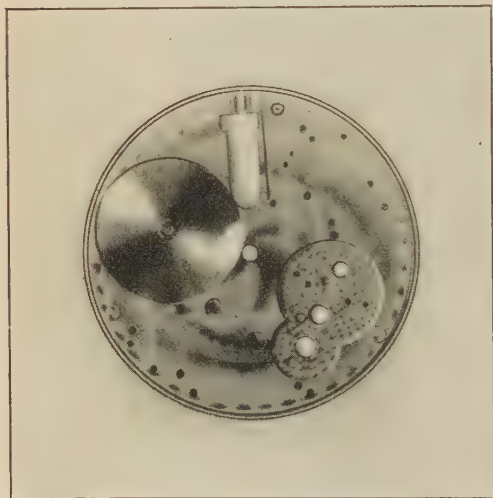
This ponderous machine with its delicate touch creates the tiny balance staffs shown on the opposite page. By such machines as these, pivots $\frac{1}{16}$ of an inch in diameter may be turned out. The human factor is almost completely eliminated.

of those early days sewing machines were designed for ornament as well as for use. Furthermore, the machines required a high degree of accuracy in the finish of many of their parts. Hence, great skill was developed in the making and finishing of small, neat, and artistic castings and forgings.

While Yankee ingenuity was displayed in the making of smaller pieces, at the same time the progress of invention made increasingly necessary the production of heavy parts as well. Engines and steamboats, for example, required larger castings or forgings for shafts and cylinders. Engine works by 1820 had been established in Pittsburgh, Cincinnati, New York, and other

places. In some of the works castings from thirty up to sixty tons were being made before 1860, although earlier in the century one of three or four tons was considered a great achievement.

Automatic machinery. — A characteristic and most important development in American metal working during this period was the increasing use made of automatic machines. These were employed in



Courtesy of the Waltham Watch Company.

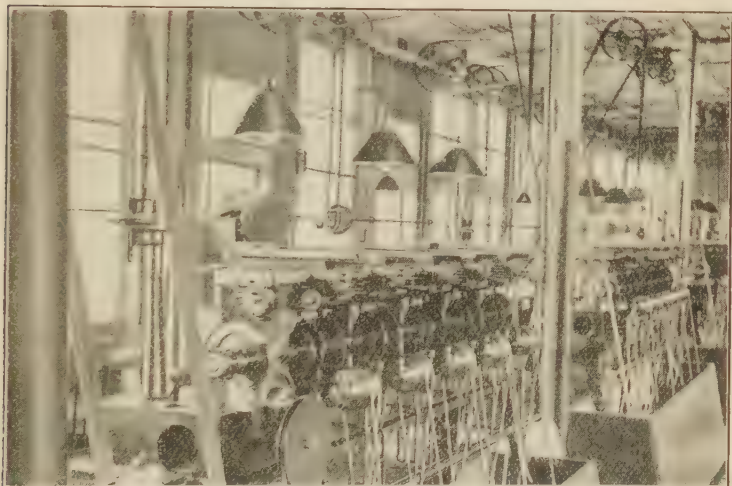
WATCH PILLAR PLATE

This is the plate which supports the entire mechanism of the watch. The picture on the opposite page shows how easily the automatic machines turn them out.

turning out by the thousand metal pieces of uniform shape and size. This development came about largely on account of the scarcity of labor and the unwillingness of Americans to undergo the drudgery of repeating the same process day after day. Thus, the machine tools — the lathe, the planer, the cutting, boring, and milling machines — were more and more put to use in the creation or finishing of metal parts of every shape and size. Before the end of the eighteenth century

machines had been invented for nail making, and also for making card teeth and bending them into shape. Others which followed later made tacks, screws, spikes, bolts, rivets, files, and chains. One machine made pins and stuck them in rows in the paper.

Standardization. — The exactitude of the work of the machines led to standardized sizes. What this might mean may



Courtesy of the Waltham Watch Company

PLATE DRILLING MACHINE

Drilling plates for 2,500 watch movements per day, handling 12,500 separate pieces, and performing about 405,000 operations. See pillar plate on opposite page.

be shown by a single example. There was a time when every bolt had its own particular nut and would take no other except by chance. The nut and the bolt had to be marked by the workman in order to prevent the mates from becoming separated. It can easily be imagined what confusion must often have resulted. This illustration suffices to show what was true of any tool or machine as well. Every part had its own particular place, and there was no other part in all the world that could surely replace it once it was lost or broken. With standardization, how-

ever, all such confusion was avoided. Any one of a thousand nuts of a given size would fit any bolt of corresponding number.

Interchangeable parts. — Furthermore, the principle of interchangeable parts came to be applied more and more in the manufacture of machinery, so that a part might be replaced by a similar one fitting exactly as well as the original. This led to an increase in rapidity of production. Farm machinery, sewing machines, milling irons, engines, and hundreds of other aids to human labor could be turned out with almost incredible speed by the various machines and processes, each one devoted to the making of a single part, thousands of them in a day, one exactly like another.

It was in the manufacture of firearms that the automatic machines for making duplicate parts were first extensively used. Early in the nineteenth century Eli Whitney had devised a system of moulds for every part of a musket. This idea was later further developed by him in manufacturing guns for the government, and also was put into effect in the government armory at Springfield, where a hundred machines were said to have been used in the making of a gun.

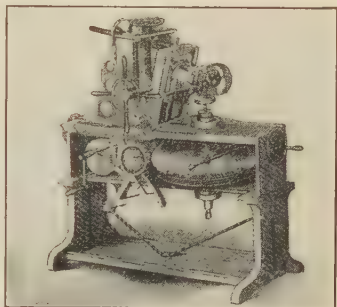
A striking example of the effects of such methods may be found in the making of clocks and watches. Up to 1840 clock works had been made of wood. Soon after this date brass was substituted, and the parts were made by machinery. Watches had been bought from abroad at high prices, as the work had all to be done by hand by men of the greatest skill. In 1850 a company started at Waltham to make the delicate watch mechanism by machinery. It was not long before American watches and clocks, accurate as timekeepers, were selling in European markets at prices incredible to the people there. At first a subject of ridicule, they soon succeeded in commanding both the respect and the markets of the world.

Specialization. — Toward the middle of the century the practice of building factories for making a special article, or even certain parts only, grew more common. The success of such undertakings, of course, depended upon an extensive mar-

ket. But while the market was the stimulus to specialized industry, it was the machine tool and a growing skill in making perfect castings and forgings that were the means of doing the work.

As one example of how specialization developed, we may refer again to the manufacture of stoves. Originally the stove makers were merely assemblers; they secured the parts of the stove from independent foundries doing general foundry work, and put them together at some place convenient to the market. They soon discovered, however, that they might make the parts themselves cheaper than they could buy them. Hence, foundries for producing stove parts only were established, and the places where merely the assembling and marketing had been done then became also real stove manufacturing centers.

Rolling. — One process which has come to have a most prominent place in the iron industry is rolling. It was first introduced late in the eighteenth century in the manufacture of nail rods. This work was centered in Pennsylvania and eastern Massachusetts. Early in the nineteenth century larger rolls were put into the Pennsylvania mills for turning out engine plates. As we have elsewhere noted (p. 187), the process was also used in the refining of pig iron. Gradually, rolls were evolved for making other articles, such as hoops, tires, sheet iron, and straps for



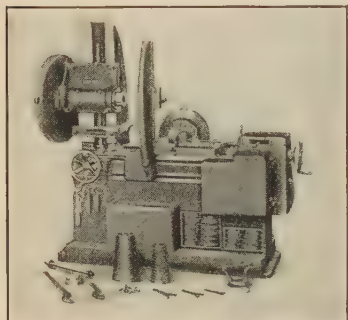
Courtesy of the Brown & Sharpe Mfg. Co.

EARLY TYPE OF GEAR-CUTTING MACHINE ABOUT 1855

This machine and the five on the following pages have done more than speed up secondary processes in iron work. Much machinery that we now use could not be made at all without the accuracy of work which these adaptations of the lathe, the planer, and the boring machine perform. The machines of earlier date, shown in these pictures, did good work, but the modern ones are more solidly built, and thus can do much heavier work. They can be run faster and with fewer interruptions, and they can do a great many more kinds of operations.

facing the rails of early wooden railroads. Soon they were adapted to the rolling of irregular shapes as well.

Probably no circumstance stimulated the iron industry, and especially the art of rolling, more than the adoption of all iron rails for railroad building. American manufacturers were caught wholly unprepared when the great demands began about 1840. Consequently, the Eastern railroad system, the main lines of which were in great part established between 1840 and 1850, used English-made rails. The first ones to be made in the United States were rolled at the Mt. Savage Works in Maryland in 1844. Other establishments in Pennsylvania, New England, and New Jersey soon followed, and



Courtesy of the Brown & Sharpe Mfg. Co.

PRESENT TYPE OF AUTOMATIC
GEAR-CUTTING MACHINE

so rapid was the progress that by 1860 the domestic output surpassed the imports.

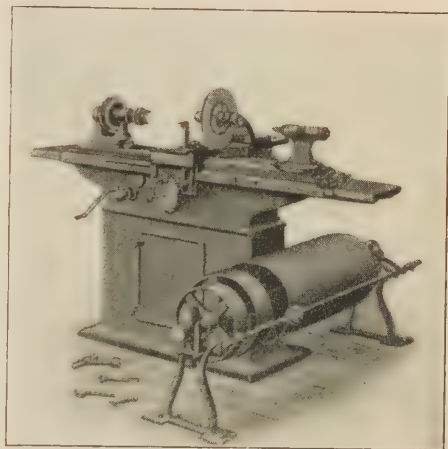
IRON RAILS — DOMESTIC AND IMPORTED

YEAR	IMPORTS (TONS)	DOMESTIC (TONS)
1850	159,000	44,000
1860	146,000	205,000

Not only was the quantity increased, but the quality was improved. The stress of the increasing weight of engines and cars made necessary constant improvement in the strength of the rails. Hence, more and more attention was paid to the refining of the iron; better and better methods were continually sought for. Perhaps no other circumstance had greater influence on the development of processes for making high-grade iron and later cheap steel than the growing need of strength in materials.

Influence of agriculture and the forests: *Farm machinery.* — Because the people of the United States were faced with

the task of developing enormous tracts of agricultural land, they naturally became the world's leaders in the invention and manufacture of agricultural machinery. The location of the best farm lands largely determined that of the factories where the farm machinery was manufactured. Central New York early became an important district for the manufacture of plows. The factories followed the wheat fields westward. In 1844 the Case shops for the manufacture of threshing machines were started at Racine, Wisconsin. Three years later Cyrus McCormick began the making of his mowers and reapers in Chicago. In the South the only implement-making industry to become important was that of the cotton gin, the chief establishments being located in Alabama and Georgia.



Courtesy of the Brown & Sharpe Mfg. Co.

ORIGINAL UNIVERSAL GRINDING MACHINE,
PATENTED FEBRUARY 27, 1877

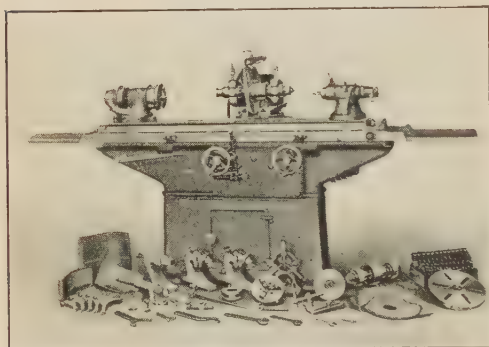
Flour manufacture. — The manufacture of flour was likewise an outgrowth of an agricultural country. This industry followed the people closely as they moved westward. Hundreds of small gristmills were scattered over the whole country. At the same time, the increasing proportion of people not engaged in agriculture created a larger and larger market for flour. Hence, we find the industry concentrating in larger plants at points convenient to the raw materials and the market.

In the early days, as the markets and the wheat fields were both east of the Appalachians, the flour-producing centers were in these regions. The power of the Hudson, the Brandywine, the

Patapsco, and the James, aided by many scattered mills, turned out by far the larger part of the flour produced until after the first quarter of the nineteenth century had passed. Along the falls of the James there were built before the middle of the century some of the largest mills in the country. By 1840 there were sixty in the vicinity of Baltimore, on the Patapsco, producing several hundred thousand barrels of flour yearly.

Wheat fields began to desert the more populous areas, however, and the flour mills followed the fields. The most impor-

tant concentration in the West took place at Rochester. During the last years of the eighteenth century and the first of the nineteenth, the Genesee Valley had been settled. This was a region of twenty-three hundred square miles of very fertile lands, and became the



Courtesy of the Brown & Sharpe Mfg. Co.

PRESENT TYPE OF UNIVERSAL GRINDING MACHINE

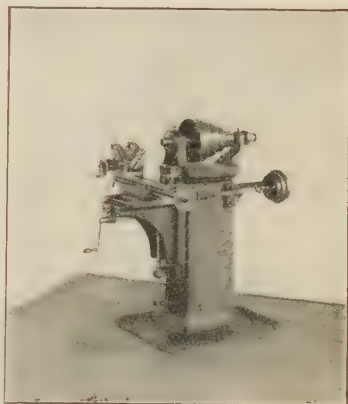
premier wheat-producing section for a time between 1800 and 1830. The grinding of this produce took place at Rochester, where by 1835 there were twenty-one mills run by steam with a daily capacity of five thousand barrels of flour.

Cincinnati and Louisville had for a long time supplied the Mississippi and Ohio valleys with a large proportion of their flour and meal. By 1850 the gristmills had collected at Cleveland, Toledo, and Chicago. While the total production of the Eastern sections continued to advance between 1840 and 1860, their proportion of the whole had declined from sixty-five to thirty-nine per cent. During the last decade before 1860 the wheat

lands of Minnesota began to be opened, and by 1860 Minneapolis had just begun its career as the great flour city.

Lumber. — The production of lumber went through changes similar to those undergone in flour milling. Sawmills run by horse or water power were to be found by hundreds all over the country. As the century progressed, however, concentration in favored localities took place. In the Eastern states this had begun even before the adoption of the Constitution. Throughout our period the Hudson, together with the rivers of New England and Pennsylvania, continued to send down large quantities of logs. In 1832 there were in the vicinity of Bangor, Maine, two hundred sawmills. Albany also continued to be one of the great lumber markets. As the vast forests of the Great Lakes region began to be attacked about 1850, sawmills concentrated about Green Bay and Saginaw, Michigan. From this district over one hundred million feet were shipped annually through Buffalo, while Chicago's trade increased from thirty-two million feet in 1847 to four hundred and sixty-two million feet in 1857. In the meantime industries of comparatively less importance had started in Wilmington, North Carolina; in Savannah, Georgia; and in Louisiana.

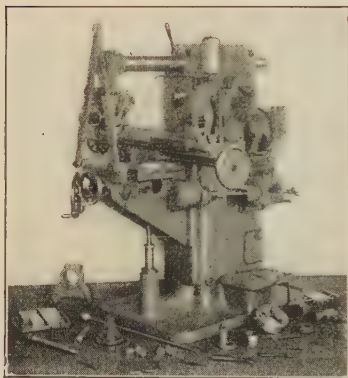
The seemingly unlimited resources coupled with improvements in mechanical processes for woodworking led to a cheapening of all wooden articles. Up to about 1815 woodworking was almost exclusively a handicraft. After that date power began to be used, and by 1831 it was reported that furniture had decreased thirty per cent in price. After 1840 furniture



Courtesy of the Brown & Sharpe Mfg. Co.

UNIVERSAL MILLING MACHINE,
INVENTED AND PATENTED
FEBRUARY 21, 1865

factories grew in size to keep pace with the larger market. Like most of the manufactured commodities, furniture, once an article made to order, was now turned out in large quantities for the general trade. Meantime, machinery was used more and more for planing and mortising, and for making siding and shingles. Gradually, better appearing homes replaced those of hewn logs. Within them were found the cheap and gaudily ornamented furniture of the new machine era.



Courtesy of the Brown & Sharpe Mfg. Co.

THE PRESENT TYPE OF UNIVERSAL
MILLING MACHINE WITH CON-
STANT SPEED DRIVE

Meat products. — Although meat packing for the market had been an industry of the Eastern cities, such as Boston, New York, and Philadelphia, for years before independence, the rise of a large-scale, specialized packing industry was an outgrowth of Western conditions. After 1820 Ohio became the great pork-packing state, where hogs raised on the pickings of the forests of Indiana and Illinois were driven to be fed on corn for the market.

Cincinnati, the chief town of the state, about this time became the slaughtering place for the droves.

In the early days the slaughtering was done outside the city on a small stream called Deer Creek, but later nicknamed "Bloody Run." The process as carried on in 1839 is thus described by an English traveler: "The hogs confined in a large pen are driven into a smaller one; one man knocks them on the head with a sledge hammer, and then cuts their throats; two more pull away the carcass, when it is raised by two others, who tumble it into a tub of scalding water. His bristles are removed in about a minute and a half by another party; when the next duty is to fix a stretcher between his legs. It is then hoisted

up by two other people, cut up and disemboweled; and in three minutes and a half from the time that the hog was grunting in his obesity he has only to get cold before he is again packed up, and reunited in a barrel to travel all over the world." ¹

This industry was financed by large buyers in Cincinnati, or by the drovers themselves. The slaughtering was done by men who took for their pay the entrails, bristles, feet, and other by-products, which were used in a number of flourishing industries, such as the manufacture of brushes, soap, glue, and fertilizers.

Cincinnati was the center of the pork-packing industry until after 1860. Between 1835 and 1860 one-fourth of the product of the entire country was packed at this point alone. Yet during these very years events were so shaping themselves as to compel a shift in the geography of the industry. The people were moving west. Illinois and Iowa were fast becoming the great Indian-corn, and, therefore, the great hog-raising states. From all sections of the great West railroads began to converge upon Chicago. These soon proved themselves the best means of transportation for animals, so that the packing of hogs began on a large scale in the rapidly growing Illinois city. The railroads also began to tap the cattle regions of the West, and before the end of the period the packing of beef had also begun at Chicago.

Financing the great industries: *The corporate organization.*—In the preceding pages we have traced the development of some of the leading manufactures up to the time of the Civil War. All along the line an important and revolutionary feature of this development was the growth in the size of manufacturing establishments, made necessary by the very rapid growth and broadening of the market.

It can easily be seen that such great enterprises required capital in amounts that but very few individuals would, through their own possessions or credit, be able to supply. It became necessary, therefore, to adopt some other method of securing

¹ Marryat, *Diary*, p. 128.

capital. For this purpose the corporate form of organization, with limited liability, was more and more put to use.

Character and powers of corporations. — A corporation is an organization created by law, and by the law is given the right to do certain specified things. What a corporation may do is fixed by the terms of the charter under which it exists. In law a corporation stands somewhat like a person, inasmuch as it can break the law, sue, be sued, and the like.

The importance of this form of organization, however, lies in its power to raise capital from any source whatsoever. By the terms of their charters corporations are permitted to capitalize, usually for some fixed amount, and this capitalization is divided into shares of a certain par value. These shares the corporation may sell to any buyer, and it is with these proceeds that the business is, in part, financed. The owners of a corporate business, therefore, being the buyers of the shares, may be few or may be very many. A corporation may also borrow money from any source and issue bonds or notes. By these devices the small and large resources of the people everywhere may be collected and used in the conduct of any enterprise. The raising of capital became vastly more easy for corporations as banking facilities grew, and as savings banks and insurance companies began to seek places for the investment of the funds which they too were gathering from the savings of the people.

Investors were more readily induced to put their savings into corporate undertakings, because of the law of limited liability. This means that should the company fail the stockholders could not be held liable for the debts. The money they had originally invested, to be sure, might be lost, but they could not be called upon by the creditors for the payment of their claims.

Increase in the number of corporations. — Hence it was that corporations grew rapidly after the Revolution. Banks and insurance companies were among the first to organize as corporations. Later, they were formed for the building of turnpikes,

canals, and railroads. As manufacturing on a large scale began, the corporate organization was more and more adopted for these enterprises. Most of the great factories of the period were financed in this way.

The tariff, 1842-1860. — We have seen that the tariff had been revised by the compromise act of 1833 in such a way as to reduce the rates by 1842 to a uniform twenty per cent. In the latter year, however, a new law was passed largely increasing the rates. This law was in force until 1846. Then a reduction again took place by the passage of the so-called Walker tariff. In this act a new method of assessment was adopted. The commodities were grouped in schedules, A, B, C, etc., each group having a fixed rate. Although the rates were greatly reduced under this law, business was so active for several years after 1850 that the government was, by 1857, embarrassed by the size of its income. In the latter year, therefore, the duties were again lowered, this time to a point which placed the country almost on a free-trade basis. American manufacturers had by that time become so firmly established that they were easily able to hold their own without much artificial protection of this sort.

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QUESTIONS

1. What developments were most responsible for the growth of manufactures between 1816 and 1860?

2. What changes took place in weaving after 1816? How did the American textile factory differ from the English?

3. Locate the principal textile centers. What was the character of the manufactures of each?

4. Which do you consider the more important as a protection to American industry, the tariff or improved machinery? In what ways was the ring spinner especially adapted to American needs? Has it continued to be so adapted?

5. What were the demands of the American market for textiles? How did this favor the American manufacturer as against the English? State the results on the manufacture of cotton cloth of improved methods and an enlarged market.

6. What natural advantages did American leather manufacturers have over the foreigner?

7. In what respects did the shoemaker of 1840 resemble the shoemaker of 1740? How were shoes supplied for the growing population without the aid of machines? Describe a shoe factory town. What was the first important shoemaking machine?

8. Locate the early iron-manufacturing regions.

9. Describe the methods of producing pig iron in America. How did the abundance of wood affect pig-iron production? What is puddling? Why was not steel extensively used before 1860?

10. What are the reproductive processes in iron and steel manufacture? What effects did the invention of stoves, sewing machines, and engines have on reproductive processes? Can you name other inventions that have had similar results?

11. What is an automatic machine? What is meant by standardization? What effects did automatic machines and standardization have on production? Was there any connection between them and the growth of population and wealth? What is meant by specialization in manufacture?

12. Give as many examples as you can showing that the establishment of one industry often brings on others quite different in character.

13. What determines the location of industries? Give examples.

14. Describe the development of the rolling process. How was it affected by railroads?

15. Trace the movement westward of the flour-milling, the lumber, and the meat-packing industries. What caused them to move? After 1815 how did the manufacture of furniture differ from the methods of

colonial days? Can you name any improvements in the modern meat-packing industry over the methods used in Cincinnati in 1840? (Armour, J. O., *The Packers, the Private Car Lines, and the People*, 42-66, 185-209, 358-380). Why did Chicago displace Cincinnati in this industry?

16. What led to the increased use of the corporate organization? What is a corporation? What are its advantages? Can you see any possible disadvantages?

17. Give an account of the tariffs from 1842 to 1860.

18. From your studies thus far what do you consider the most necessary conditions for the establishment of manufacturing?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the abandonment of New England farms was caused more by the New England factory than by the competition of the Western farms.

2. Resolved that the concentration of control of capital resources through corporate organization was an evil which offset the good of the increased production which the corporations brought about.

3. Resolved that women had no greater share in industrial production in 1850 than they had in 1750.

CHAPTER XIII

CURRENCY, FINANCE, AND BANKING, 1816-1860

Introduction

Payment of the United States debt

Abnormal business and speculative activity

Internal development

Speculation

Credit and speculation

The distribution of the surplus

The end of the United States Bank

Financial panics

The real causes of panics

Preliminaries to the panic of 1837

Results of the panic

The Independent Treasury

Coinage

Introduction. — In a former chapter (p. 115) we traced briefly the measures put into effect by the government, under the guidance of Alexander Hamilton, by which the credit of the nation was put upon a sound foundation. We also saw how, in the following years, the national debt had been gradually reduced until the opening of the War of 1812, and how, after the war began, it had again grown very rapidly.

The payment of the debt. — Undismayed at the new debt, the nation went immediately to work paying off its obligations. For two or three years after the end of the war, there was an enormous increase in the customs revenues, owing to the sudden dumping of large quantities of foreign manufactures into the country. In 1816 the Treasury received over thirty-six million dollars from this source alone. Then the receipts began to fall, and in 1821 they were but a little over one-third of what they had been in 1816. From that time on there was a general improvement. Business in the country picked up, the tariffs were

increased, and incomes from other sources, particularly from the sale of public lands, grew larger. During the period from 1816 to 1835 inclusive, there were but three years when government expenses exceeded income. In each of the others there was a surplus varying from one million five hundred thousand dollars to sixteen million five hundred thousand dollars. By the latter year, therefore, the debt had been entirely wiped out, and so much money was coming in that our statesmen were wondering what to do with it all.

Abnormal business and speculative activity: *Internal development.* — The twenty years following the reestablishment of the United States Bank were, as we have seen, years of economic activity. In the East manufacturing increased as never before. Foreign commerce, although slow at first, picked up after 1820 and was extended to all parts of the world. In the South millions of dollars were being put into slaves and new lands for the production of cotton. In the Northwest there was rapid expansion. In 1836 the government received from the sale of land alone nearly twenty-five million dollars, an amount greater than the customs revenue. All over the settled area of the country new cities were springing up, while the old ones were rapidly growing. Vast systems of roads and canals were projected, and many had been completed. Meanwhile the railroad era had begun. Everywhere there was a spirit of confidence and hopeful expectancy for the future — a spirit often exaggerated into over-confident braggadocio and reckless expenditure of money and life.

Speculation. — How far the speculative fever had risen is shown by the following contemporary account. Chevalier, writing in 1835, says: "In New York building lots have been sold sufficient for a population of two million souls, and at New Orleans, for at least a million. Pestilential marshes and naked precipices of rock have been bought and sold for this purpose. In Louisiana, the quagmires, the bottomless haunts of alligators, the lakes and cypress swamps, with ten feet of water or slime, and in the north, the bed of the Hudson with twenty, thirty, or

fifty feet of water, have found numerous purchasers.”¹ In New York were to be found plans of lots in Chicago (with an actual population of two or three thousand) numerous enough for three hundred thousand people. Miss Martineau, who visited Chicago about the same time, describes the streets of the town as being filled with speculators. One young lawyer of her acquaintance had realized five hundred dollars per day for five days by making land-title deeds at one dollar per deed. “Wild land,” she writes, “on the banks of a canal, not yet even marked out, was selling at Chicago for more than rich land, well improved, in the finest part of the valley of the Mohawk, on the banks of a canal which is already the medium of an almost inestimable amount of traffic.”²

Credit and speculation. — A great part of this activity was supported by credit. From 1830 to 1837 imports exceeded exports by one hundred and forty million dollars. This is merely another way of saying that we bought on credit during these years one hundred and forty million dollars’ worth of goods from abroad. Foreigners caught the speculative fever and invested their favorable balance and much more besides in American enterprises. The West and the South likewise bought of the East on credit. Banks lent money to farmers on the security of an expected crop. Men bought land to sell at a rise, rather than for agriculture. To make their payments to the government they borrowed from the banks. The government, in turn, redeposited the money in the banks, and the process of borrowing, buying, and depositing might be repeated again and again. A rapid expansion in the number of banks resulted. In 1829 there were three hundred and twenty-nine, with loans outstanding of one hundred and thirty-seven million dollars. In 1837 they numbered seven hundred and eighty-eight, with loans of over five hundred and twenty-five million dollars.

Distribution of the surplus. — An act of the government added to the speculative mania. We have seen how the income from

¹ *Society, Manners and Politics in the United States*, 305-7.

² *Society in America*, I, 180-181.

tariffs and land sales had exceeded for a number of years the requirements of the nation. Consequently, in the year 1836 Congress voted to distribute the money on hand among the states in a series of payments. The distribution was called a loan, although no state has ever paid back any of the amount received.

End of the United States Bank. — The ending of the life of the Bank unsettled the financial situation still more. President Jackson was opposed to the institution. In the first place, he believed it had political power which it used against himself. Secondly, he believed it represented aristocracy and foreign influence, as against democracy and the new spirit of Americanism which we have seen rising (p. 154). In the third place, he was a Westerner and a Southerner combined, a son of those regions which were being the most rapidly expanded and where the people were in debt. He was influenced, therefore, by their opposition to conservative and safe banking. Moreover, he believed that the management was corrupt.

Soon after his first election he began an attack on the Bank. When, in 1832, Congress passed a rechartering act, he killed it with a pocket veto. Later in the same year he was triumphantly reëlected. He interpreted this as a popular endorsement of the veto, and ordered the government deposits to be removed gradually and placed in selected state banks. After the charter expired in 1836, the institution continued under state charter for some time. Although attempts were later made to create a new federal bank, all were unsuccessful, and the policy was finally abandoned.

Financial panics: *The real causes.* — Meanwhile, the country was rapidly being brought to an "over-bought" condition. The people as a whole had contracted more debt than their available resources could meet. When such a condition becomes acute, a financial panic is likely to ensue, bringing ruin to many people and hard times to all. Between 1810 and 1860 there occurred three such panics, one in 1819, one in 1837, and one in 1857. Of these the panic of 1837 was the most severe, although the causes of all were similar.

Yet up to 1837 popular confidence in the future was undiminished. The nation's debt had been paid off. The government's revenues were greater than the expenditures, and their distribution among the states had been partially carried out. Men were happy because they were buying and seemed to be prosperous. They had a well-founded confidence in the country's ability to meet all obligations, if only time were given for the development of resources. They had no means of knowing, however, whether they would be able to meet demands should some accident cause them to be made at once.

Preliminaries to the panic of 1837. — There came a succession of accidents. (1) Two banks, one in England, the other in Ireland, failed in 1836 and involved three English houses that were heavy creditors in America. (2) In 1835, 1837, and 1838 there were crop failures. (3) In 1836 the government refused to accept in further payment for the public lands anything but gold and silver. (4) We may justly add to all this the loss at a critical period of the steadying influence of the federal bank.

The foreign houses involved were forced to call upon Americans for the payment of their obligations. New Orleans banks were affected first and involved others, especially in New York. Eastern institutions began to call in their loans made to the merchants and the Western banks. Merchants and manufacturers were thus forced to demand settlement of credits extended.

The difficulties of settlement were increased by the failure of the crops. Banks which had lent money on this security were unable to collect. The Specie Circular, in which land offices were instructed to accept only specie in the payment for land, added to the troubles. Speculators who had bought land expecting to pay in bills now rushed to the banks for specie. Too often it was found that there was none to be had, and the unsoundness of the banking system was thus disclosed. Meanwhile, the government's surplus revenue in process of distribution was rendered useless for the stemming of the tide.

Results of the panic. — With all creditors calling for settlement and with debtors having no means of payment, the in-

evitable crash came. Hundreds of banks and mercantile houses all over the country failed. Almost all banks suspended specie payments. Thousands of dollars' worth of bank bills in the hands of the people became worthless overnight. People ceased to buy, and the highly inflated values fell. Manufacturers closed their doors or ran on reduced time. The revenues of the government fell off through the decline of imports and the cessation of land buying. Thus, having need of the surplus the government halted its distribution. State canal building had to be suspended or abandoned. A number of states meditated, and several effected, a repudiation of their debts. For five years buying was limited to immediate needs, while the people saved their resources for a new start. Not until 1842 had all banks resumed specie payment. During the period the courts, especially in some of the Western states, were filled with thousands of bankruptcy proceedings and suits brought by creditors against debtors.

Independent Treasury. — During the crisis and afterward there was an unsuccessful attempt made to reestablish the United States Bank. The government had become reluctant, however, to use the state banks as places of deposit for its funds. Under Van Buren's administration, therefore, Congress voted to establish at Washington an independent treasury where the government could keep its surplus funds. In different parts of the country subtreasuries were also built. Most of the time since then revenues not immediately called for in paying bills have been kept in idleness in these places.

Coinage. — It will be remembered (p. 118) that in 1792 Congress made provision for a national coinage system, establishing the dollar as the unit, and providing for its coinage either in gold or silver. In spite of this law, foreign coins, which had always constituted a large part of the specie in circulation, continued to be used. Gold coins, of which nearly sixteen million dollars' worth had been minted up to 1834, disappeared as soon as they were put into circulation. This was because 24.75 grains of gold were worth more than 371.25

grains of silver. Gold coins were, therefore, hoarded, melted down for the gold, or sent to foreign countries in the payment of bills. Only a few silver dollars — about one million — were coined, and then their output was discontinued by Jefferson, and was not resumed until after 1834.

In that year a new coinage law decreased to 23.2 grains the amount of gold in a dollar, so that the ratio between the two metals stood at about sixteen to one. This ratio made the silver dollar worth more than the gold, so that all the silver coins began to go out of circulation, the silver dollar being rarely seen after 1840. From 1834 to 1861, in fact, only two million eight hundred thousand silver dollars were coined. French, Spanish, and then Central and South American coins took the place of the United States pieces. Great inconvenience to the local trade was also experienced through the scarcity of small coins, many of which were melted for the silver. To remedy this condition, Congress in 1853 reduced the amount of silver in subsidiary coins. This act was the final change made in the coinage until after the Civil War.

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5. President Jackson maintained that the United States Bank Act was unconstitutional. Was he right? HEPBURN, A. B., *A History of Currency*, 79-82.

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QUESTIONS

1. What effects did the War of 1812 have on national credit?

2. What were the main sources of revenue after the war? Why were these revenues so large?

3. Why were Eastern state banks run on sounder principles than those in the West? Why did the number of banks increase so rapidly in the South and the West? Review the effects of too much paper money.

4. What were the causes of the business and speculative activity between 1820 and 1837? Give some idea of how extensive a use was made of credit during these years. Why was credit so necessary? Is speculation on credit economically justifiable? What effect does a speculative craze have on prices? Was it good business for the federal government to distribute among the states funds which it had raised by taxation or by sales of land?

5. What were President Jackson's objections to the Bank?

6. What were the causes of the panic of 1837? Could the building of railroads cause a panic? (COMAN, K., *Industrial History*, 301-304.) Can you show that conditions between 1914 and 1920 were such as to create the likelihood of a panic? Could panics ever occur if people were thrifty all the time instead of only when they are hard up?

7. Can you justify the Independent Treasury from the point of view of economics?

8. Give an account of the currency system from 1790 to 1860. Why were French and Spanish coins so common in the United States?

SUGGESTED QUESTION FOR DEBATE

1. Resolved that it is better to pay as you go, even if you have to go more slowly, than to advance more rapidly by means of credit.

CHAPTER XIV

LABOR CONDITIONS AND ORGANIZATION, 1789-1860

Early conditions

The growth of wealth and class consciousness

The causes of the labor problem

 The growing markets

 The factory system

 The growth of cities and educational facilities

 The influence of immigration

 The change from governmental regulation to laissez-faire

 Labor and the doctrine of laissez-faire

Labor organization (1825-1855)

 Local unions of skilled workingmen

 Attempted formation of wider organization

 Labor unions and the law

Labor policies and activities

 Strikes

 Labor political parties

 Labor and social reorganization

Labor conditions before the Civil War

 The abundance of opportunity

 The hours of work

 The employment of children

 Wages

 Prices of commodities

Early conditions. — During the first thirty years of the nation's life the terms "laboring class" and "capitalist class," so familiar to us at the present day, had hardly appeared. We have already seen how journeymen and master may have worked together in such industries as shoemaking and the textile manufacture (p. 69), the position of journeyman being but a step in the progress to mastership. Employer and employee did about the same work, the former having the added duty of securing the raw materials for the work and finding his small market for the finished product.

Growth of a class feeling. — As the industrial revolution began to result in the concentration of industries in ever-growing units and in the accumulation of larger and larger fortunes, however, the distinction between the owners and the workers became more evident. The terms "capitalism," "labor problem," and "laboring class" appeared more and more frequently. This growth of class consciousness was accompanied by the establishment of labor unions, labor parties, and labor periodicals.

Causes of the labor problem. — Among the more important causes of the labor problem were (1) the development of a wide market for manufactured goods, (2) the growth of the factory system, (3) the growth of cities and educational facilities, (4) immigration, and (5) the decline of government regulation of industry and the growth of the doctrine of laissez-faire.

The market. — On other pages we have seen how the custom of making goods for sale in advance of orders began as the density of population increased and cities grew larger. This led to a demand for a new kind of skill — the ability to see in advance just how much of a given commodity the market would absorb, to sell goods when produced, and to determine when to buy the raw materials. Salesmanship and the buying of raw products, therefore, became sciences. The buying and selling problem grew larger also as the South and the West expanded, increasing the size of the market as well as the distances between the market and the manufacturer. There were required an army of men who were not themselves engaged in the making of the products. Moreover, the larger market led to greater concentrations of capital employed in manufacturing for the trade. The manufacturers hired larger and larger numbers of laborers in their plants, but no longer worked there themselves. Out of the new conditions grew two distinct groups — those who were engaged in the business side of manufacturing, and the workers, who made the goods.

Growth of the factory system. — While the factory was separating employer and employee, it was, on the other hand, bringing the workingmen closer together where they could talk

over matters of common concern. It gave impetus to the division of labor. More and more the factory hand came to do but a single process; less and less grew his chances of becoming a skilled craftsman, or graduating into the employing class.

Furthermore, the workingman could not control the factory and the machinery as he had once controlled his little shop. More and more he depended for his living upon the capitalist, who now owned shop and tools. For the individual alone it became increasingly difficult to resist burdensome conditions, for if he resisted, the employer had only to "fire" him and get a new "hand." Consequently, it began to dawn upon the laborers that their strength must lie in united resistance.

Growth of cities and educational facilities. — The growth of cities also brought men together and rendered united action much less difficult. Cities served as schools where men became quickly acquainted with conditions in the world outside. Railroads and telegraphs brought communities far separated in point of miles closer and closer together in point of time. From about the middle of the century cities could communicate with one another in as many minutes as it would have taken days in the earlier period. Meanwhile the daily press began to keep the news of the world up to the minute, and the public school was inculcating a desire for better living conditions. By this shrinkage in the world's size laborers were brought into sharper competition, and, in order to nullify the increasing pressure upon one another with the resultant low wages and poor working conditions, they began to unionize. Instead of fighting one another, the declared idea was to join forces and fight for the common benefit.

Immigration. — One of the notable facts in American industrial development since about the year 1840 has been the greater and greater prominence of the foreign immigrant in filling the demand for labor. At first most immigrants turned to the hard, rough work of which there was so much to be done, but many also went into the factories. Here machinery displaced

so much skilled labor that processes could be carried on by the unskilled after a few weeks' practice. From 1840 on the operatives in the Eastern mills tended more and more to be foreign. The native American stock thus displaced took the higher, better paid positions, or moved west to start a new life of independence. Consequently, a distinction — not necessarily permanent, but temporarily effective — arose between the old stock and the new, owing to differences in race, language, religion, and standards of living.

Change from governmental regulation to "laissez-faire." — In European countries in the Middle Ages and for several centuries beyond, interference with the daily life of the individual had been accepted as a matter of course. In the earlier centuries the guilds, in the later, the local or central governments watched over and attempted to regulate almost every activity of mankind. Labor, wages, prices, the methods of manufacture, the quality of the goods, and their purchase or sale were strictly regulated by local rules or the law of the land.

In colonial days craftsmen had similarly been protected from too much competition within their own ranks by apprenticeship laws, largely copies of the customs and laws that had been effective in England since the fourteenth century. Under these regulations a master workman was limited as to the number of apprentices that he might take. As a rule, if there were more than three apprentices, a journeyman must be employed for every additional apprentice. Seven years was the ordinary term of apprenticeship, and during this period the master was bound to teach his trade to the apprentice. Thus, the number of craftsmen was limited, and the training and skill of all were practically on a level.

During the latter half of the eighteenth century, however, a new philosophy had established itself in England — a philosophy known as "*laissez-faire*." In accordance with this doctrine the best government is the one that interferes least with the individual. It is unnecessary to detail the causes of the change in England. In America there were special reasons

for the development of laissez-faire. The most important were the boundless resources of the country and the seemingly endless opportunities to gain a fortune. Few, indeed, were born rich, but fewer expected, if let alone, to die poor. It was common talk that any boy might become president of the United States, of a railroad, or of a bank. At the least, Uncle Sam stood ready with a farm or a thousand other glittering opportunities for everybody. But in order to obtain these fabulous riches and honors, the individual must be free to exercise his power of initiative. Michel Chevalier thus sums up the American ideal of the 'thirties:

"There is not a man of much consideration, who has not his scheme for a railroad, a project for a village or town, or who has not *in petto* some grand speculation in the drowned lands of the Red River, in the cotton lands of the Yazoo, or in the corn lands of Illinois." ¹

Labor and laissez-faire. — The coming of the laissez-faire doctrine and the withdrawal of government regulation compelled workers to protect themselves. The extending American market demanded cheaper goods, with the result that manufacturers and employers began to go outside the legally trained journeymen for a cheaper labor supply. Men who had always been protected by the law began to find their calling exposed to what at first was "illegal" competition. The result was a harder struggle for a living against decreasing wages. It was to protect their ancient customs against illegal competition that the first real trade unions were formed, and the rules of the union gradually took the place of the laws that had once protected the laborer.

Labor organization, 1825-1855: *Local unions of skilled workmen.* — From 1825 to 1836 there was great industrial activity (p. 206). Moreover, in this period prices rose rapidly. Labor was consequently in demand, and at the same time wages were proving less and less adequate to meet the cost of living. Hence, we find in all the large centers of industry

¹ *Society, Manners and Politics*, 285-286.

local organizations of the skilled trades, such as the building trades, shoemaking, and hand-loom weaving. Common labor and the labor of factories and commercial establishments remained unorganized.

It is not difficult to see why these early organizations were local and why they were unions of the trades. They were local because practically all the labor competition was between local craftsmen. Poor means of travel and communication prevented competition between the workers of different communities. The unions were confined to the trades because the craftsmen were, in general, the men of the greatest intelligence among laboring people and understood better the value of union. Their interests were also more uniform, and there were fewer of them, so that their places could be filled less easily than could those of the unskilled. It has always been the history of labor that unionizing should begin among the more highly skilled and better paid workingmen, and then gradually extend to the lower grades. During this first period, however, permanent unions never reached farther than the locality and the craft.

Attempted formation of wider organization. — Yet attempts at wider organization were made. These were but reflections of the changes that were being slowly brought about by better roads, by canals, and by railroads and telegraphs. Sometimes they were mushroom growths, the result of a period of hard times. In 1827 the carpenters of Philadelphia struck for a ten-hour day. Although unsuccessful in attaining its original purpose, the strike resulted in the formation of a union of the trades of the city, such as would today be called a city central union. By 1840 such unions had been established in twelve other cities. There was even one effort in 1834 to organize a national union of the city centrals. This union, however, was ahead of the needs of the times, and, together with many another organization, met with disaster in the crisis of 1837. After the crash local trades unions formed with considerable rapidity, and were well established by 1850.

Labor unions and the law. — The law and the courts proved to be an obstacle in the way of labor organization. The English common law treated agreements among employers to lower, and among workingmen to raise wages, as conspiracies punishable by fine or imprisonment. The offense consisted not in attempting to influence wages, but in the agreeing to do so. American courts followed this rule, and a number of convictions on this ground were secured during the first forty years of the nineteenth century. The first decision sustaining the legality of labor organizations was made by the Massachusetts Supreme Court in 1842. This was a landmark in the history of unionism, inasmuch as from that date the legality of unionizing was generally admitted.

Labor policies and activities: *Strikes.* — In the early days strikes were less dangerous and disastrous than they are at the present time. Owing to the existing conditions, they seldom spread farther than the limits of a single city. As a rule they were not so likely to be successful as the modern strike because they were always under the shadow of the law. Furthermore, there was not strength enough in the unions themselves to carry on a long struggle. Machinery for fighting, such as picketing, boycotts, and the like, had not been worked out, and there were no strike funds for the support of the men while out of work.

Labor parties. — Belief in the miraculous power of the ballot was particularly strong during the early years of the nineteenth century. It was during that time that the old property and religious qualifications for voting were giving place to universal manhood suffrage. To the recently enfranchised the ballot was like a new toy, which they wanted to play with. Attempts to form labor parties, with the idea of putting in the legislatures or upon the bench men who would be subservient to the will of labor, have frequently been made at intervals throughout the century. One of the earliest of these attempts occurred during the years 1828 to 1831. This labor party, like all others that have been tried thus far, ended in failure,

although it succeeded in sending one man to Congress from New York. The ties of the old political parties and the wiles of the politicians were then, as always, too strong, and the party soon disappeared.

Labor and social reorganization. — The period from 1840 to about 1855 has been called by one writer "the hot air" period of American history.¹ It was the time when the minds of men from every station of life were filled with schemes for the betterment of the lot of unfortunate mankind. As objects of attack various practices or institutions were selected, prominent among which were the methods of land distribution, private ownership of property, competition, monopolies, and banks. Many such plans to put all on an equal footing and eliminate the advantages possessed by a favored few followed the hard times attending the panic of 1837. These were not exclusively labor movements, as they were backed by philanthropists and others of the highest culture and attainments.

Public lands free to all was one of the most desired objectives of the labor movement of this period. The main purpose of the agitation was to prevent the growth of great landed estates through speculation, inheritance, purchase, or other means. The lands had been relied upon to draw off part of the labor supply, thereby increasing the demand for labor and insuring high wages. Labor organizations, therefore, cast a large part of the blame for the lack of work after the crisis of 1837 upon a bad system of land disposal. From the very beginning of the organizing movement in the 'twenties the unions had demanded land reform. After the crisis the demand grew stronger, and in it the workingmen were joined by many others. Out of the general discussion there grew a doctrine that everyone had a natural right in the land, just as in water and air. Vast accumulations of land, therefore, must necessarily deprive many of what was rightfully theirs.

George Henry Evans, the editor of the *Workingman's Advocate*, one of the earliest labor papers, worked out a plan

¹ Commons, J. R.. *Documentary History*, vii, 20

for land disposal which was largely endorsed by organized labor. His scheme embraced (1) the free gift of the public land, (2) limitation to actual needs of the amount given to any one person, and (3) restrictions on the sale or inheritance of lands in order to prevent accumulations. The cause also found a powerful supporter in Horace Greeley, editor of the *New York Tribune*. Under Greeley's guidance, this paper — daily and weekly — had attained an enormous circulation, and for years it vigorously supported the cause of land reform as advocated by Evans and labor.

In spite of powerful backing, however, little was accomplished. A homestead law was introduced in Congress in 1852, and numerous others in the years following, but all failed of enactment. It was not until ten years later, while the nation was in the midst of a life and death struggle, that a free homestead act was finally passed. Even then, the most important part of the program — restrictions to prevent large accumulations — was omitted.

Numerous forms of communism also flourished. The idea underlying all was that natural resources and the fruits of labor should be shared by groups. Instead of an unequal division among individuals, all were to share alike. Private property, competition, and speculation were to be done away with. During the 'twenties Robert Owen, an English manufacturer and philanthropist, had come to this country and started in Indiana a colony, which he called New Harmony, with this idea as the basis. After a few years of discord, however, this attempt had fallen to pieces.

Soon after 1840 another communal movement started and became widespread. It was backed by many prominent philosophers and thinkers. "Fourierism," so called from its French founder, Fourier, became the rage. Mankind was to be organized in groups, each called a phalanx. The members of each group were to work in common and share equally the returns from their labor. Many phalanxes were started all over the country, and one or two bade fair to be successful.

The most notable one was Brook Farm, where were gathered some of the greatest minds of the country. In the end all failed. Misfortune came to some, as in the burning of the building at Brook Farm. The real cause of failure, however, was the strength of individualism. From the first the failure of communism was certain, owing to the many roads open to the individual for a quick and easy fortune. Independent self-reliance had become ingrained in American character through centuries of struggle with hard natural conditions where individual strength counted most of all. It was not to be uprooted so easily by the passing whims of the moment.

Coöperative schemes accompanied the communistic. Consumers were to get rid of middlemen's profits by dealing in supplies for themselves, and labor was to take over the profits of manufacture by itself becoming the owner of factories and machines. In 1845 the Workingman's Protective Union was formed in Boston to open coöperative stores. For several years it carried on successful ventures in various parts of New England. By 1849 its annual purchases amounted to over two hundred thousand dollars. Besides this, in many parts of the country separate trades undertook coöperative schemes. The tailors of Boston opened a store in which they put on sale their own products. In Cincinnati, in 1849, the moulders got together and built a factory, the capital being furnished by the workingmen, largely in the shape of labor. These are but examples of numerous similar undertakings. In the end, as in the case of communism, all were wrecked by the impatient individualism of the day.

Labor conditions before the Civil War. — What were the conditions under which men lived and labored before the Civil War? Was the average man who worked for wages worse or better off than the same kind of man today? Much has been written in demonstrating how greatly the workingman's lot has improved, and an equal amount in glorifying the "good old times." It is difficult to make a true comparison because the backgrounds of the two periods are entirely different.

Opportunity. — There can be no doubt that men were on a more equal level in the early days than now, because opportunities were more numerous, while people were fewer. Even to the poorest, fortune seemed to be beckoning at almost every turn. An Irishman of nine years' residence in the United States writes exultantly to a cousin in 1850 of how one on seventy cents a day — the going wage — might save enough every week to buy an acre and a half "of the finest land in the world," and within a year go west with enough money in his pocket to buy an eighty-acre farm.¹

Hours of work. — The hours of labor were long. The Irishman's "laborer's day's work," for which seventy cents was to be paid, would be at least fourteen hours. This was a moderate day for out-of-doors common labor, and it was not unusual for many another occupation. During a strike of the bakers of New York City in 1834, it was stated that the men were working one hundred and fifteen hours per week. In the factories, where men, women, and children from ten years up were employed, the hours ranged from eleven and a half to thirteen per day. Moreover, workingmen were driven hard; according to foreign observers, much harder than in Europe or England. Besides all this, for the work done the worker might be forced to take part or all of his pay in goods obtained at a store run by his employer, where, it is freely charged, less favorable terms were given than could have been obtained elsewhere.

Employment of children. — Furthermore, little thought had been given to the effects of bad sanitary conditions and long hours for women and children upon the future vitality of the race. A Massachusetts legislative report on factory conditions gives the following figures on the character of the help in Rhode Island cotton mills in 1831:

Children.....	3472
Women.....	3297
Men.....	1731

¹ Commons, J. R., *Documentary History*, VII, 76.

In a labor paper of about the same date it was stated that the larger part of the hands in Philadelphia cotton factories were children between six and seventeen years of age. There were practically no laws regarding school attendance. In some places parents were displaced by their more cheaply paid children, and were forced to keep all the family in the factories. Eight or ten weeks of school for a few years was the best that many children could ever hope for. Little improvement was made in this respect during the period, although some states had passed laws requiring three months' schooling per year for children under twelve. Leaders of public opinion expressed their approval of the system. One of the important arguments in favor of the encouragement of manufactures was that they would make possible the employment of children who would otherwise go in idleness.

Wages. — Wages were low, although by 1860 the general average had risen considerably. Skilled craftsmen, whose numbers were limited and whose services were in demand, succeeded between 1800 and 1860 in about doubling their wages. Carpenters, for example, were receiving about one dollar a day in 1800 and two dollars in 1860. It is probable that the general average of wages rose in all occupations. Averages, however, are deceptive, especially for wages in factories and other places where great numbers are engaged, because the more highly paid foremen and superintendents are generally included, and thus a more respectable average for the whole is obtained. As a matter of fact, adult male workers of the unskilled class rarely got much over one dollar a day, and oftentimes considerably less. Factory women received from two to three dollars a week, and children about one dollar and a half. The average amounts per year actually paid the operatives of certain Lowell mills the following table will show:

Year	Yearly wages
1830.....	\$164
1840.....	175
1850.....	190
1860.....	197

Prices. — Small wages were, however, matched by low cost of living. Wages were, indeed, low, but prices for many necessary articles were even lower. Food sold at rates which to the modern housewife would seem ridiculously cheap. In New England between 1800 and 1860 prices for certain food products, articles of clothing, and rent were as follows:

Beef per pound.....	5¢- 9¢
Butter per pound.....	18¢-26¢
Fish per pound.....	3¢- 6¢
Milk per quart.....	3¢- 5¢
Eggs per dozen.....	7¢-25¢
Potatoes per bushel.....	30¢-80¢
Sugar per pound.....	18¢ (1800)-10¢ (1860)
Shoes per pair.....	90¢-\$2.00
Calico per yard.....	39¢ (1800)-10¢ (1860)
Rent, 4-6 rooms, per month.....	\$5.00-\$7.00

We must remember, too, that prices in New England, especially for food, were generally the highest for the whole country. In the West food prices were about one-half what they were in the East. From 1830 to 1850 fowls in Kentucky or Indiana sold for one dollar a dozen, a whole mutton carcass for one dollar, eggs around four cents a dozen, and butter at from six to eight cents a pound. Flour and Indian meal, both of which were comparatively high in the East, were very cheap in the West. Miss Martineau tells of securing in western Pennsylvania for two persons lodging overnight, two dinners, supper, breakfast, and lunch for a total cost of one dollar.¹ It will readily be seen that with the prices of necessities at such a level, the problem of living was comparatively simple even with the lower scale of wages.

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10. **The doctrines of laissez-faire and individualism.** CHEYNEY, E. P., *Industrial and Social History*, 224-228, 232-235; CARLTON, F. T., *Organized Labor*, 263-267.

QUESTIONS

1. State the causes of the labor problem.
2. What influence did the growth of a larger market have upon the separation of those engaged in the industries into antagonistic groups? How did each of the following react upon the labor situation: the growth of cities, railroads and telegraphs, and educational institutions? Do laborers compete with their employers, or with one another? How did machinery encourage immigration?
3. Make clear what is meant by the laissez-faire doctrine. Trace the change from governmental regulation to laissez-faire. Why were Americans especially opposed to governmental interference? How did the laissez-faire doctrine affect labor? Do we now believe that the best government is the one that interferes least with the individual?
4. Why were there no national unions in the early years of unionism? Why were unskilled workingmen slow to organize? What was the common law in regard to unions? Did the law against conspiracy restrict employers as much as it did laborers? (CHEYNEY, *Industrial and Social History*, 279-281.)
5. Could labor attain all its ends if laborers would all vote together? Would a labor party be more likely to succeed now than in 1830? What were the demands of labor regarding the public lands? Does everyone have a natural right in the land? Would it have been well to limit the amount of land that an individual might hold? Would it have been a good thing to forbid anyone's selling at will land which he had received from the government?
6. Give an account of the communistic movements of the years 1825 to 1850. Why did the schemes fail? Do you consider it possible for communism ever to become permanently established?
7. What is coöperation? What are its advantages? What difficulties stand in its way? Is it more desirable than communism?
8. Compare the condition of the laborer in 1830 with his condition in 1920. Decide which period you would prefer and give your reasons. What effect would the low prices of food and clothing have upon the farmer? Are there any respects in which the interests of the farmer and the laborer in the industries are the same?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that a machine tender in a modern shoe factory is more advantageously situated than was the old-fashioned cobbler in his own shop.

2. Resolved that an individual who acquired land that had once been public land should not have been permitted to dispose of it to anyone who already had as much as three hundred and twenty acres (any other amount of land may be agreed upon as the maximum).

3. Resolved that the man getting a dollar and a half a day in 1850 was better off than the man getting six dollars in 1920.

CHAPTER XV

AGRICULTURE BEFORE 1860

Introduction

Agricultural progress before 1860

Soil destruction

Ignorance of scientific agriculture

Speculation in land

Economic basis of land waste

Character of crops raised

Progress in soil conservation

European scientific studies

European experiment farms

Science and soil fertility in the United States

Beginnings of agricultural education in the United States

Agricultural schools and fairs

Agricultural societies

Federal aid to agriculture

Improvement of farm animals

Agricultural changes in the East

Farm machinery

Plows

Planters and seeders

Harvesting improvements

Threshers

Introduction. — From the beginning agriculture was by far the most important of American industries, and, in spite of a relatively decreasing importance, holds a preëminent position to the present day. Throughout many years this country was regarded as the granary and the slaughter house for the rest of the world. A large proportion of the nation's accumulated capital has come through the sale of the products of its soil.

Agricultural progress before 1860. — We have seen, however (p. 48), that in colonial days the agricultural output was produced under methods that were unscientific and wasteful.

These methods were not confined to colonial days. Not until after the Civil War was serious thought given to the saving of our agricultural resources. By the middle of the nineteenth century, it is true, the country had become the greatest food producer in the world. But this was the case mainly because of the abundance of land and the fertility of the soil. Until after the Civil War farmers got their profits by "mining" the soil of its riches, robbing it of its fertility as they had always done, and then abandoning the old fields for new. This soil robbery was particularly marked in the South under the plantation and slavery system, as we shall see on other pages. The same conditions existed in the North, however, only rendered less striking and apparent through the greater thrift, business ability, and intelligence of the free white farmers as contrasted with the overseers and the negro laborers of the South.

Yet while so little attention was being given to the conservation of the soil resources, much progress was made along other lines. As will appear later, live stock was greatly improved through better breeding, feeding, and housing. Changes were likewise brought about in the more thickly populated regions by the adaptation of farm products to meet the demands of the city markets near at hand.

The real American contribution to advanced agricultural methods before the Civil War, however, consisted of the invention of farm machinery. In this respect a revolution was brought about quite as remarkable as the revolution in manufacturing and transportation. The vast expanse of virgin soil and the scarcity of labor were responsible for the invention of machinery that would do the work of many men. By the use of machinery the Mississippi Valley and the Far West were finally brought under cultivation. This was the first task of the American farmer and scientist, and this work they performed with singular efficiency.

Soil destruction: *Ignorance.* — In some measure wasteful methods were due to ignorance. Nowhere was there an agricultural science previous to the nineteenth century. Through

long years of experience England and Europe had learned that better crops could be secured by planting in rotation cereals, root crops, and legumes. Something had also been learned about fertilizers. Nothing was known, however, of the relation between plant life and the soil. Indeed, many believed until well into the eighteenth century that plants obtained all their food from the air, and it was not until nearly the end of the first half of the nineteenth century that scientists had proved that plant food came also from the soil.

Speculation. — Land speculation also led to poor farming. Not all men moved west to farm; many went to get a farm to sell. Advances in price might not be the result of improvements, but rather of an increase in the population, or of a land boom, such as frequently struck Western communities. Land speculation was one of the allurements of the frontier to the majority of the people who were penetrating the forests and spreading over the prairies.

Economic basis of land waste. — The chief cause of agricultural slackness, however, was the abundance of land. In most of the regions best suited to agriculture, it did not pay to farm well. Experience had proved to the frontier farmer that the quickest and surest way to get ahead was to take his profits out of the land. High-class farming, which conserves soil fertility, required a considerable amount of capital, and demanded, in the absence of machinery, the expenditure of much labor. The frontier farmer had, as a rule, little capital, and labor was very scarce. It paid best, therefore, for the immediate present to waste the soil, which was very plentiful, very cheap, and usually very fertile. If anything was to be saved, it must be capital and labor.

Furthermore, the conservation of the land by crop rotation involved the raising of many crops which did not pay because of the distance of the markets and the difficulties of transportation. It would hardly pay, for example, to produce hay for the market, because hay is so bulky that the value would be consumed before the market was reached. Root crops would freeze

if transported in the fall or the winter, and in the spring it would be too late. For similar reasons fruit growing, gardening, poultry raising, and dairying for the market brought no profit. Therefore, such products were raised mainly to secure enough for family use.

Foreigners trained in the thorough methods of culture of their home lands soon learned the American ways. Miss Martineau, writing in the 'thirties, tells of the American who plows around the stumps without measurement of the area plowed or of the seeds sown. She tells, too, of the American's English neighbor who clears carefully half the area, plows deeply, sows thick, raises twice the amount of grain on one-half the land, and points proudly to his crops. Soon, however, the painful realization comes that his great crops will not pay for the labor expended to produce them, and it does not take him long to decide that it pays to spend land in order to save labor. Then, to his own immediate advantage, he becomes as slovenly a farmer as the American.¹

Character of crops raised. — The conditions described above resulted in concentration on a few main crops. Wheat and Indian corn have always been great staples of the American farmer. In addition, barley, rye, and oats have also been raised in considerable quantities. Of all these Indian corn has been the most important, because it is good food for both man and beast, because it yields per acre two or three times what most of the others do, and because it flourishes everywhere. It has always, therefore, been raised in almost all the settled parts of the country.

Unlike Indian corn, wheat has had a more checkered career. This cereal has always migrated with the people. At the end of the eighteenth century Pennsylvania and eastern New York were the principal wheat-growing sections. During the first quarter of the nineteenth century the center of production had moved to western New York. With the opening up of the Great Lakes and the digging of the Erie and the Ohio canals, it shifted

¹ *Society in America*, I, 235.

to Ohio and gradually moved westward until by 1860 Ohio, Indiana, and Illinois were the leading wheat states of the Union. We shall not here pursue it farther in its wanderings, but we all know that today the great wheat states are those that border on each side of the great arid regions of the West.

Wheat thus continued to follow the frontier in the North because it served as the money crop much as cotton did for the South. In the first place, it commanded money in a world-wide market, as no other foodstuff did. It would also stand long and hard journeys. Above all, on the rich virgin soil it could be produced with a comparatively small expenditure of labor. Production was limited only by the amount that could be harvested in the short two or three weeks of harvest time. In later days it has also proved to be a crop that can be produced farther within semi-arid regions than many others.

Progress in soil conservation: *European scientific studies.* — During the first half of the nineteenth century English and European farmers and scientists began to investigate seriously the relation between plant life and the soil. Early in the preceding century Jethro Tull, an English farmer, after extensive experimentation concluded that the secret of large crop yields lay in proper cultivation. His theory was that plant life came from the soil, but only in case the soil was deeply plowed and thoroughly pulverized.

The theories of Tull, however, did not go far enough, for there was nothing in them to emphasize the need of putting back into the soil what the plants take out. Scientists in England, France, and Germany took up the matter, and before 1850 they had discovered the elements of which plants are composed. They found that one element — carbon — comes from the air. Other elements — nitrogen, phosphorus, potassium, iron — they proved to be taken from the soil. One far-reaching discovery disclosed the further fact that certain plants, such as clover, peas, and beans, under proper conditions, are capable of taking nitrogen from the air and replenishing the soil with this element. Thus, a valuable step was taken in understanding

the proper rotation of crops. Soon after 1840 a German named Liebig published all that scientists had discovered on these subjects, and his book was recognized for a long time as the leading authority on scientific agriculture.

European experiment farms. — In addition to the work of these scientists, experiment farms were being carried on in numerous places. On these for many years experiments were made in different rotations of crops and in the use of fertilizers. Careful records were kept of every experiment and of the results obtained. One of the most famous of these farms was the Rothamsted Experiment Farm, established in 1843 at Harpendon, England, by Sir John Lawes and J. H. Gilbert. Others were located in Germany on a number of estates near Leipzig and elsewhere. On some of these latter estates, indeed, records of production had been kept since the middle of the sixteenth century. Up to about 1820 these records show but little variation in yields of cereals per acre. Beginning then, however, there comes an enormous increase, until by 1850 the fields were producing of wheat, rye, barley, and oats from two hundred to three hundred per cent more than they had done thirty years before. These startling changes had been the result of careful experimentation and the application of scientific principles.

Science and soil fertility in the United States. — In America these discoveries made but little impression. Abundant fertile land checked whatever interest might have been aroused. A few books were published which gave inadequately the results that science was attaining. Only in the Eastern states, where the soil was wearing out, was any attention given to the matter. In the great Middle West, the world's granary, hardly a thought was bestowed upon it. The following quotation from a popular book on agriculture probably sets forth accurately the attitude of a large majority of the people:

"Scientific agriculture stands today with phrenology and biology and magnetism . . . No farmer ever yet received

any benefit from an analysis of the soil and it is doubtful if anyone ever will." ¹

Yet toward the middle of the century warning voices were raised more and more frequently. In the late 'fifties the *New England Farmer* said:

"The constant deterioration of the soils of New England and throughout most of the agricultural districts of the United States, is a fact of portentous and alarming significance." ²

In 1854 ex-Governor Boutwell, of Massachusetts, declared before an agricultural gathering in that state that the agricultural profits of Massachusetts were less in 1850 than in 1840. He warned the farmers that they were paying too little attention to the preservation of soil fertility, and asserted that every year Massachusetts farmers were destroying by wasteful methods the equivalent of sixty-three thousand acres of land. About the same time *De Bow's Review* gave figures showing how the productiveness of the land decreased as one passed from the new states to those which had been longer settled. According to these figures the average yield of wheat per acre in Iowa, Texas, Wisconsin, and Florida was from fourteen to fifteen bushels; in Illinois, Indiana, Ohio, Michigan, and Missouri, between eleven and twelve bushels; in Virginia, North Carolina, Kentucky, and Tennessee, about seven bushels; in all the other Eastern states production was brought to around thirteen and fourteen bushels only in case artificial fertilizers had been applied to the soil. In all states where cultivation had gone on for over twenty-five years there had been a notable decline in the productivity of the soil.

Beginnings of agricultural education in the United States: *Agricultural schools and fairs.* — In addition to such individual warnings there were other evidences of a gradual awakening to the need of education in agriculture. Some private academies, with little success, attempted to put agricultural training into their courses even in the eighteenth century. Stock, vegetable,

¹ Nichols, James R., *What Chemistry has Accomplished for Agriculture* (1866).

² *De Bow's Review*, Aug., 1858, p. 151.

fruit, and grain exhibits were common early in the nineteenth century, and these developed into the county fairs of today.¹ By means of premiums they tried to stimulate improvements in the grade of animals and in the size, yield, and quality of vegetables, fruit, and cereals.

Agricultural societies. — Such exhibits not only stimulated individual farmers to greater effort, but the local associations under whose auspices they were given often grew into state organizations. The New York State Agricultural Society began before the end of the eighteenth century. Soon it was sending out lecturers among the farming communities — the forerunners of the hundreds of agents that, at a later date, were to be commissioned by the states and the nation in the interests of agriculture.

In 1852 there was also formed the United States Agricultural Society. The objects of this society among others were (1) to study the question of establishing agricultural schools, colleges, and model farms, (2) to promote soil and geological surveys, (3) to show the importance of science to agriculture, (4) to keep in touch with foreign agricultural societies and practices, and (5) to look for new seeds and plants.

Federal aid to agriculture. — Meanwhile, beginning in the year 1839, Congress made annual appropriations for the promotion of the interests of agriculture. No special bureau was established at this time, but the appropriations were put in charge of the Bureau of Patents. With such provision the

¹ The following premiums awarded to Earl Stimson at the Ballston Spa, New York, fair in 1819, illustrate what was being done at hundreds of others:

For best cultivated farm, 150 acres.....	\$10
Indian corn, 104½ bushels per acre.....	15
Barley, 60¾ bushels per acre.....	5
Spring wheat, 26¾ bushels per acre.....	8
Potatoes, 714 bushels per acre.....	6
Beans, 40 bushels per acre.....	5
Grass, 3.15 tons per acre.....	4
Garden.....	5
Gelding.....	6
Yard of poultry (250 fowls).....	3

—From *Niles' Register*, October 30, 1819.

federal government was satisfied until after the Civil War began.

Farm animals. — If economic conditions would not permit the farmer to conserve his soil, they did stimulate improvement along other lines. Even if it did not pay to raise heavy crops, it paid to raise heavy stock, particularly hogs and cattle. Indian corn was eventually to win its place as the preëminent American cereal and its title "King Corn" because it provided abundant food for hogs and cattle. We have seen (p. 167) that in the early days of Western migration cattle and hogs seldom became fat. Indian corn, however, soon began to bring about a change. This cereal was very fattening and so cheap oftentimes that it did not pay to haul it to market. As corn raising extended westward, the practice of driving hogs east to be fattened in better settled regions (p. 198) was given up, and the hogs were fattened at home. Since wandering through the forests tended to prevent fattening, the farmers began to inclose the animals and feed them heavily on corn. At the same time they began to breed with more care, selected stock being brought in for the purpose. Soon the old forest hog of long snout and legs, flat sides and sharp back, coarse bristles and straight tail, gave place to the corn-fed type with its short snout, broad back, short legs, and curly tail. These were the results of imprisonment, breeding, and above all, much corn.

Cattle raising went through similar changes. In the Western states, when, after 1850, beef packing began at Chicago, the farmers became interested in raising large animals. Ever since the seventeenth century cattle had been increasing in size. The medieval ox, it is estimated, weighed around six hundred pounds. As in the case of the hog, the increase was brought about by better feeding, housing, and breeding. The Short Horn, the Holstein, the Jersey, and the Guernsey — the first two famous for beef and quantity of milk, the last two for quality of milk — were imported from England, Holland, and the Channel Isles. On the Western farms size was the chief concern, as the cattle were raised for slaughter. In the East,

where the great markets were stimulating dairy farming, milking quality was another point desired.

The breeds of sheep were also improved, owing largely to the demand for wool from the woolen factories. During the first quarter of the nineteenth century several herds of merino sheep from Spain and of Saxon sheep from Germany were imported.



Courtesy of the Department of Agriculture.

A RAZORBACK

This dejected looking animal worked himself to skin and bones making a living for himself. He was far more agile, however, than his sleek looking descendants on the opposite page.

The two new breeds were famous for the length and fineness of their wool, in contrast to the coarser wool—but better mutton—of the English breeds, which had comprised the stock of the earlier period.

Agricultural changes in the East.—In the Eastern states the factories, the cities, and, after the opening of the Erie Canal in 1825, the competition of the

Western farms were working a revolution in agriculture. More and more the factories drew the boys away from the farm, especially from those least accessible to the markets. For the farms in their vicinity, the cities were creating a rapidly growing demand for garden truck, fruit, hay eggs, milk, butter, and cheese. Consequently, more and more farmers put their energies into the production of these commodities. As better transportation facilities were provided, especially after about 1840 when the network of railroads was rapidly spreading over the Eastern states, the truck and dairy farms gradually extended farther away from their markets. In the 'fifties, moreover, the factory system invaded the farm, and began to take away another of its many activities—the manu-

facture of butter and cheese. Hence it came about that while the Western farms were gradually supplanting the Eastern in supplying bread for the people, the cities of the East were creating an entirely new kind of farming in their vicinities. The new system and the high value of the land induced the farmers to pay more attention to soil conservation. Moreover, the



Courtesy of the Department of Agriculture.

PRIZE PIGS

These are prize pigs of a modern boys' pig club, but similar animals were developed during the latter half of the nineteenth century when the farmers began to cross the razorback with more aristocratic breeds, to enclose and house the animals, and to stuff them with Indian corn.

farmers came gradually to look for profits in their calling instead of merely a living. They were becoming specialists and business men. It is to be understood, of course, that these changes affected only a comparatively small area up to the time of the Civil War.

Farm machinery. — It was in improved farm machinery that the greatest strides forward were made during this period. The economic conditions which resulted in improved farm machinery

were the same as those which made the farmer waste his land, raise many cattle and hogs, and keep moving ever farther into the West. The conditions were cheap land and cheap food. Since, with prices so low, only a large production at small labor expense could be made to pay, any improvement that tended to increase production while saving labor was sure to be in demand. Hence came the world-famed American agricultural machinery, of which some of the most important was invented during the first half of the nineteenth century. As the machinery most in demand was such as would enable the farmers to cultivate larger and larger areas, the improvements hastened the exhaustion of the soil. The man who could extract the fertility from ten or fifteen acres with the old hand tools could perform the same operation upon thirty, forty, or even sixty acres, as the new machinery appeared.

Plows. — The earliest improvements were those made in plows. The plow of colonial days was somewhat — but not much — better than that used by the ancient Egyptians five thousand years before. The colonial plow had an iron tip where it entered the soil, and in so far was an advance over the Egyptian. It was also, doubtless, much larger and heavier. So heavy and clumsy was it, in fact, that it might require the supreme efforts of three or four men — one to hold the handles, one to sit on the beam to keep the plow in the ground, another to lead the oxen, and still another to follow with a hoe to break up the clods. This awkward wooden tool would not turn the soil over; it merely turned up great, rough ridges which “stood up like the ribs of a lean horse.” In virgin grass lands it would not work at all. The prairie lands of the Mississippi Basin, firmly held together with many growths of tough grass roots, would not to this day have been turned over had the task been left to the wooden plow.

A properly shaped plow will turn the soil completely over and lay it flat, while the draft will be comparatively light. With wooden plows it was practically impossible to get the required shape. Late in the eighteenth century Charles Newbold took

out a patent for a cast-iron plow. This was followed by many other experiments. The new implement, however, had to contend with a superstition held by many farmers that iron poisoned the soil. It was, moreover, not until 1840 that the proper shape was found, so that the iron plow came in slowly. Meantime, the open prairies brought forth a special plow, called the "prairie breaker." This was equipped with a disk wheel having a sharp edge, which, attached to the beam just ahead of the plowshare, cut through the grass roots, leaving a strip of soil about a foot in width, which was immediately turned over by the plow.

Planters and seeders. — The improvement of the plow made possible the preparation by a single person of a large acreage for cultivation. A more rapid means of planting, therefore, at once became necessary. Indian corn had always been dropped by hand, one hill at a time, the planting of an acre being a good day's work. A rather short planting season thus limited the acreage that could be put under cultivation. First improvements were along the line of aids to hand planting, one of them being an attachment to the hoe which permitted the dropping of the seed when the hoe was struck in the ground. Following this came a hand planter with which a man could plant a row at a slow walk. By 1860 a single-row horse drill and a double-row planter drawn by horses were in common use. The latter, by means of an automatic device invented later, dropped the seed in hills forming checkerboard squares, so that the field could be cultivated both lengthwise and crosswise.

The sowing of wheat and other grains broadcast by hand was the common practice until after the Civil War. This could be done with such rapidity that there was no great demand for machines for the purpose. Broadcast seeders, however, did appear.

Harvesting improvements. — Harvest time is the critical period for the cereals, such as wheat, oats, and rye. When they begin to ripen, they come very rapidly to maturity. As soon as ripe these grains must be cut, for if a rain falls upon them at

this time the stalks break over, and the grain is beaten into the ground. Even if no rain comes the seed soon begins to drop, and much is thus lost. Two weeks is the limit of time for the harvest of a field of wheat. A shorter time is much better.

The colonial tool for cutting grain had been the sickle — the tool that the ancient Egyptians had used, and for that matter the one used by all people since their time. With sickles it



Courtesy of the International Harvester Company.

WHERE THE FIRST MCCORMICK REAPER WAS MADE. CYRUS MCCORMICK'S BLACKSMITH SHOP

would take several men a day to cut an acre of grain. It will thus readily be seen that not many acres of wheat, oats, or rye could safely be planted by a farmer, unless he could command an army of men at harvest time. The demand, then, for improved harvesting machinery was strong and insistent.

One step had been taken early in the nineteenth century by the adaptation of the scythe — a colonial invention — to the cutting of grain. This new tool was called a cradle, and was so constructed as to keep the stalks of grain straight and parallel,

and to throw them to one side in separate piles. These piles were later bound into bundles by the workmen. By means of the cradle a man's efficiency was increased three or four fold. With this tool the farmer made shift for about half a century. The difficulties of the harvest, however, were still great, and it



Courtesy of the International Harvester Company.

THE FIRST SUCCESSFUL REAPER

Compare this one-horse machine with those found in chapter 26.

was these alone that put a limit upon the amount of grain that might safely be sown.

With this problem many inventive minds were busied during the early years of the century. By 1833 the United States government began to issue patents for grain reapers. The first one taken out by Cyrus H. McCormick, the man who did more than any other to perfect a machine that would work, was issued in June, 1834. McCormick was at that time twenty-five years of age. His experiments had all been carried out in a shop on his

father's farm in Virginia. For some years after getting his first patent he continued his experiments there, making trial of his machine in his own and his neighbors' fields. By 1840 he had so perfected his reaper as to begin its manufacture for sale in the wheat-growing states. By 1845 he had manufacturing plants in Cincinnati and in Brockport, New York. Two years later, however, he established works at Chicago, which has since been the headquarters of the plant.

In the meantime a number of other men had obtained patents. At many places reaping and mowing contests were held, nine machines taking part at Geneva, New York, in 1852. At the Paris exposition in 1855 a contest between an English, a French, and an American reaper was held. The French machine cut a given area in seventy-two minutes, the English in sixty-six, and the American in twenty-two minutes. The supremacy of the American machine at that time was but prophetic of the position which our agricultural machinery was to hold for years to come. By 1860 the clumsiness of the early machines had been removed, and the reaper was prepared to take the place of the thousands of men who were about to be absorbed into the war. In the winning of the war for the North it certainly played as effective a part as did the cannon and the muskets.

Threshers. — During the same years that brought forth the reaper, the threshing machine was also gradually being perfected. The first marked improvement over the old method of threshing with the flail and separating the grain from the chaff by means of the wind, was the invention early in the nineteenth century of a fanning-mill separator. A number of years later the cylinder set with spikes for threshing was evolved, and by the middle of the century the separator and the thresher were combined in a single machine. Some time before this the manufacture of threshers on a large scale had begun at Racine, Wisconsin (p. 195).

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QUESTIONS

1. Describe the typical American agricultural methods before the Civil War.

2. Why would scientific farming not have paid the farmers before 1830? Was it greater wisdom and foresight that caused Europeans to be more careful farmers than Americans were?

3. What is the special importance of Indian corn? Why has wheat always been a crop of the frontier in America? Will wheat raising cease now that the frontier is disappearing? (See CARVER, *Principles of Rural Economics*, 113-114.)

4. Give an account of the advance in scientific agriculture in Europe during the first half of the nineteenth century. Why were the discoveries of Europeans so little used in the United States? In what parts of the United States would any movement for better agricultural methods be most likely to begin?

5. What were the purposes of agricultural fairs? Give an account of their development up to 1860.

6. Why did it pay to raise heavy live stock when it did not pay to raise heavy crops of grain? State the reasons why live stock tended to become larger, and its flesh better in quality.

7. What agricultural conditions tended to stimulate the invention of farm machinery? Trace the improvements made in the plow, planting machines, harvesting machines, and threshing machines. Of the four, which was most needed by early American farmers?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that up to the time of the Civil War getting the land under cultivation was of greater importance than devising methods of conserving the soil.

2. Resolved that the inventor has accomplished more for agriculture than the scientist.

CHAPTER XVI

SLAVERY IN THE UNITED STATES

Origin of slavery

Slavery on the wane

 Restriction of the slave area

 Conflict of interests in the South

 Antislavery movements

Cotton and slavery

Nation-wide influence of slavery

 The "North" and the "South"

 Slavery and expansion

The slave trade

 Importation of slaves

 The domestic slave trade

Slavery and soil wastage

Slavery, plantations, and general prosperity

 The character of the settlers

 Capital investment

 Inequitable distribution of land

 The Southern yeoman

 The distribution of wealth

 The frontier state of the South

Slavery a white man's burden

Origin. — The institution of negro slavery in the United States had its origin in the demand for labor. Much land made it impossible to get labor in any other way. We have grown accustomed to thinking of this country as having been settled by the white man — by the English, Spanish, French, and other European nationalities. It is probably true, however, that up to 1830 there had been more immigrants to North America from Africa than from any single European nationality. At any rate it is certain that most of the southern part of the country was settled by the negro. By him much of the tobacco area of Virginia and Maryland, the rice swamps of the Carolinas

and Georgia, the sugar plantations of Louisiana, and the cotton fields of all the southern tier of states were cleared, broken, and planted. The slave system became better established and the number of slaves increased much more rapidly in the Southern than in the Northern colonies because of the warmer climate, to which negro life was better adapted; and because of the more generally fertile soil, which led to emphasizing agriculture at the expense of other industries. Furthermore, the four great staple crops — tobacco, rice, sugar, and cotton — were found adapted to Southern soil and climate, and also, apparently, to profitable production under a system of negro slave labor.

Slavery on the wane: *Restriction of the slave area.* — The demand for labor was just as great in the Northern colonies as in the Southern, but the climate and soil, and other conditions making necessary a diversified industry, rendered negro slavery less profitable. The place of the negro, as we have seen (p. 63), was generally taken by the indentured or hired servant. By the time of the Revolution the labor of the North was being done for the most part by white men, so that an effective sentiment for abolition developed in these sections. During the war, or soon afterward, therefore, slavery was brought practically to an end in all the states from Pennsylvania northward.

The conflict of interests in the South. — In the Southern colonies, however, there were difficulties to be overcome which were not met with in the North. In the first place, there had for many years been money in slave labor on the tobacco plantations. There still was profit in the rice and sea-island cotton fields of Georgia and South Carolina. The result had been the importation of many negroes, and the whites feared a race conflict if the slaves were made free. Moreover, the people had become used to the system, and the long-established habit was hard to break, even when it was found working a positive injury to the free population.

Finally, there was a strong slave-trading interest opposed to any movement against slavery. In colonial days attempts had been made by Virginia and Maryland to put an end by law to

the importation of negroes, but the laws were vetoed by the English government. Englishmen, as well as Northerners, carried on an active and very profitable slave-kidnaping trade. Slavery in the West Indies supported the New England rum manufacture and furnished a market for Northern produce, such as fish, meat, flour, wheat, and lumber. Therefore, while the Northern sections were abolishing the system from their own midst, their traders were busy helping, for the sake of the profits, to fasten it upon communities where there was some economic chance for its survival.

Nevertheless, there was a strong Southern sentiment against slavery. The reason was that it did not prove really profitable. The apparent profit in tobacco raising had depended upon an uninterrupted replenishment of worn-out lands by new. By 1783, however, the opportunity to take up land east of the mountains had gone. This circumstance was followed by an inevitable decline in the value of the plantations. More than in the case of any other labor system, slavery depended upon robbing virgin soil of its fertility. Jefferson could not make both ends meet on his estate at Monticello and died heavily in debt; Madison had to sell part of his land in order to feed his slaves; and it was only by very careful management that Washington made his plantations pay. By 1800, therefore, we find that all the Southern legislatures had forbidden the importation of negroes. Many of the leaders favored the abolition of the slave system entirely, Washington often urging the Virginia legislature to consider some form of gradual emancipation.

Antislavery movements. — During the period from the end of the Revolution to about the year 1806, the antislavery sentiment existing in all the states showed itself in various ways. The Ordinance of 1787 forbade slavery in the newly acquired Northwest Territory. In the Constitutional Convention it led to the first of a long list of compromises which the nation was forced to make over the question of the slave (p. 107).

In many of the states we also find antislavery societies being formed. Large numbers of slaves were freed in the Northern

states through the activities of the Quakers. Congress was flooded with petitions regarding the system, but had no constitutional right to act until 1808, when a law forbidding further importations of slaves went into effect.

Cotton and slavery. — With the decline of the tobacco plantations slavery seemed on the point of gradual extinction through



Courtesy of the Department of Agriculture.

COTTON PICKING

The cotton-picking season lasts several months, extending from early fall often well into the winter. The work is still done by hand although machines are gradually being developed.

a sort of starvation process. Up to 1795 tobacco and rice had furnished the chief nourishment to the slavery sentiment. Rice culture had never been as profitable as that of tobacco, and the lowlands on which it had to be raised were limited in extent. Cotton had not become a crop of importance, because of the cost of separating the seed from the fiber. A great surplus of slaves had to be kept on the plantation for this work alone, and this cost rendered impossible the raising of the most common, short-fibered variety. It was just at this critical time that Eli Whit-

ney invented the cotton gin, a machine that would do the work of one hundred and fifty men in separating the seeds from the fiber. By means of this invention the South was enabled to respond to the ever-growing demand of the recently established English factory system for more cotton.

As to slavery the results of the growing demand for cotton, its high price in these early years, and the decrease in cost of its production were momentous. The cotton gin released the surplus of negroes that had hitherto been required for the separation of the seed, and they were put to raising more cotton. It was figured that the cost of production was now about sixteen cents a pound, while the price ranged from twenty to forty-four cents, so that there began at once an extension of the cotton-raising area (p. 168). Slaves came once more into demand, and from this time on the possibility of their gradual disappearance was gone.

Nation-wide influence of slavery: *The "North" and the "South."* — The effect of slavery upon our history has been so widespread that we must study it not merely for the local problems which it presented, but also in its relations to the nation as a whole. Its greatest political influence was that it ultimately divided the nation into the "North" and the "South." In a country as large as ours the interests of one locality are often bound to conflict more or less with those of another. Such difficulties, however, can usually be adjusted without real injury to either side. But from 1820 to 1860 hardly a question of domestic politics could arise that was not made vital by its real or fancied bearing on the extension of slavery. More and more slavery made the North and the South take opposite sides on almost every matter, until both finally saw that a system of slave labor and one of free labor could not live side by side.

Slavery and expansion. — How this division was manifested is most aptly illustrated by the quarrels which took place over the new lands as they were added to the nation. The ever-recurring question was, should these additions be free or slave? Whenever it arose the people north of a line, formed by the

Pennsylvania and Maryland boundary and extending down the Ohio River, voiced an opinion almost solidly at variance with the equally unanimous belief of the people south of the line. Until shortly before the Civil War these questions had generally ended in compromise. The most important concerned the admission of Missouri (1820), of Texas (1837-1845), the disposition of the lands acquired from Mexico (1848), and the organization of the Nebraska Territory (1854).

The story of these great struggles has been told so often that it is needless to detail them here. Suffice it to say that by 1855 both sides had reached a point where they wearied of compromise. The time had come when the North feared and the South firmly believed that the slave owner must be permitted to take his slaves whithersoever in the Union he pleased. The fears of the one and the hopes of the other seemed to be confirmed by the Fugitive Slave Law and the Dred Scott decision, both of which appeared to place slaves in the category of property protected by the Constitution. Thus we come to the end of compromise, to the formation of the Republican party dedicated to freedom, and to Abraham Lincoln, who, with farseeing vision and noble courage, laid down the proposition that the country must be all one thing or all the other.

The slave trade: *Importation of slaves.* — We have already noticed how the profits of tobacco raising on the large plantation disappeared when the virgin soil became exhausted. The same results followed the raising of cotton. For a time the South Carolina planters found an apparent profit in their plantations growing out of the increased demand for cotton, its high price, and the decreased cost of production. These profits followed them as they pushed westward over the "black belt" and into Texas and Arkansas. While this process was going on, there was a great revival in the slave trade. South Carolina in 1803 repealed her law against the importation of negroes from abroad. For many years after 1808, when the federal law forbidding the traffic was passed, smugglers were busy in the remote and hidden inlets of the Southern coast.

The domestic slave trade. — From 1820 on, however, the trade was mostly domestic. The price of slaves constantly rose for two reasons. The cost of producing negro field hands was greater in America than the cost of stealing them from Africa. In Africa the negro had supported himself until manhood; in America his master had to bear this expense. Secondly, the rapid extension of the plantations westward and the immense profits gained led to great increases in the demand for slaves. The cost of a field hand in 1790 was around two hundred dollars. From 1830 to 1840 it ranged from eight hundred to one thousand dollars, and between 1850 and 1860 it had risen to from twelve hundred to two thousand dollars per head. At this time the planters were boasting — and fearing — that if slavery were extended into the Mexican Cession, they would get five thousand dollars for their slaves.

Yet the advances in price were often disastrous to Southern agriculture. If slaves sold for fifteen hundred dollars in Alabama and Mississippi, they could not be bought for much less in Maryland, Virginia, and South Carolina. In these states, however, the worn-out soils would not pay the interest on fifteen-hundred-dollar negroes. Thus, the high price of slaves tended to decrease the profits from their tobacco and cotton and to increase the number of farms, already large, that had been abandoned to weeds. This process gradually extended westward as the new lands became old lands, so that in spite of the immense tracts that were being put under cultivation a constantly increasing area was being abandoned.

The result was that Virginia and Maryland, then North and South Carolina, and, finally, Kentucky and Tennessee (the first states beyond the mountains to be settled) became slave-exporting states. As the plantations became increasingly valueless for cotton and tobacco, the planters relied less and less on these crops for their profits, and more and more on the sale of the negroes that they raised.

The extent of the domestic trade is shown by the fact that in 1850 the number of slaves in Louisiana was more than double

what it had been in 1830; while in Alabama it was three, and in Mississippi five times as great. Most of this increase was due to immigration, perhaps two-thirds of the negro population having accompanied their masters as they moved west. The other third was brought in by slave dealers. It was estimated in 1832 that Virginia was exporting yearly six thousand slaves, and the number probably increased greatly in the following years. During the decade 1850 to 1860 the annual exportation of slaves from the slave-raising to the slave-consuming states was about twenty-five thousand.

The consequences of the high price of negroes, therefore, were, first, to preserve a sentiment in the older states favorable to slavery. Secondly, the profits, whether from cotton or the slave trade, created an abnormal demand for fresh lands. Inevitably the lands farther and farther west became profitless; inevitably, then, the slave power must extend farther and farther west. New lands were the life of slavery. This fact explains why the South repudiated the Missouri Compromise, and got to the point where it was ready to demand that from no territory not already a state should the slave system be excluded.

Slavery and soil wastage. — The plantation system with negro slaves brought about soil exhaustion more rapidly than did any other system for several reasons — chiefly the ignorance and the inefficiency of the slave. It prevented the rotation of crops. The negro, only shortly removed from a state of barbarism, and a slave, displayed the lack of energy to be expected under such conditions. If he learned the routine of cultivating one crop, it was about all that could be expected. Slave inefficiency and carelessness rendered skillful soil cultivation impossible. Lastly, the raising of many animals was out of the question, and this source of soil fertilization — as well as of extra profits — was eliminated from a great part of Southern agriculture. Mules — the only animals that could endure the management of slaves — were most in demand. Most plantations, however, raised the greater part of their meat supply.

The inefficiency of the slave was accentuated on many plan-

tations by the overseer system of management, and the carelessness or absence of the owner. The owner was too likely to leave the management to the overseer, who was interested not in the future, but in the present production. His pay depended on how much cotton he got per slave. Hence, his interests lay in getting as much as he could from the land, letting the future take care of itself.

Slavery, plantations, and general prosperity. — The whole system of negro slavery tended to prevent the growth of prosperous communities. The chances were good that a thousand-acre plantation would, after thirty years of cultivation, be worth much less per acre than would a thousand acres in the hands of half a dozen farmers in a free state after the same length of time. The reason for this is to be found partly in the nature of the investment made, partly in the character of the settlers of the two communities.

Character of the settlers. — To begin with, there would be on the thousand free acres six white families with all the energy, thrift, and intelligence of the average free white settler. On the plantation there would be one, or possibly two, white families; all the rest would be negroes, whose past was rooted in savagery and whose hope for the future was slavery. In the one community, the chief human resource was the slave; in the other, the human resource was the free man. How the presence of thrifty and intelligent people raises the price of real estate in a community, and how the opposite is true where a few shiftless families settle, may be observed at any time in almost any place where people group together. The economic value of the human resource was secured in the free states as it could not be in the slave states.

Capital investment. — Again, the planter paid originally for his thousand acres probably about what the farmers had paid for theirs. Before the plantation could be cultivated, however, he had to make another, and probably much larger, expenditure for about fifty slaves at around twelve hundred dollars apiece. He raised cotton and little else. With this he bought

from the North and from England practically everything that he needed. He furnished a great market for their cloth, lumber, tools, animals, and foodstuffs. A large part of the profits that might have been invested in the South under a different system went elsewhere. Much of the capital that should have gone into good roads, fences, tools, substantial buildings, mills, grain elevators, and animals was constantly drained away to purchase the goods of outsiders or a supply of inefficient, forced labor.

By the end of the thirty years the original plantation would have gone back in productive capacity very much. The planter might by this time hold most of the land of the neighborhood and might be counted rich. Yet the community as a whole probably had a seedy, "run-down" appearance. The chances are that the lands would be undrained and unfenced, the buildings few and poor, and the neighbors far apart, in many places the majority of the inhabitants being negro slaves.

Inequitable distribution of land. — The increasing size of the plantations meant that the land was being absorbed by the few, while the many were being crowded out. The whites in the settled districts who were unable to invest in slaves in large numbers had but few alternatives to which they might resort. Many sold their farms to the plantation owners and moved farther toward the frontier in the hope of becoming planters themselves. Some withdrew to the mountains or the mountain foothills and there eked out a scanty existence on barren and rocky soils. Many lived wretchedly in the midst of the slave-holding communities crowded by the negro out of the industrial world and by the plantation off the land, gradually losing their moral fiber and becoming too lazy to work at slave tasks, despised alike by blacks and whites, the "poor whites" of the slave system.

The Southern yeoman. — It should be clearly understood, however, that there were a great many farmers in the South who were not plantation owners, mountaineers, or "poor whites," but who were of the same self-respecting, hard-working type as were to be found in the North. These men lived in large numbers on small farms in all the Southern states. They were more numer-

ous in the northern tiers of Southern states — western Virginia, North Carolina, Kentucky, Tennessee, and Missouri. Many of these farmers possessed no slaves; others had from one to ten or fifteen. For them the “degradation” of labor did not exist. They and their sons worked in the fields alongside their slaves much as the Northern farmer worked with his “hands.” They raised some cotton, where cotton could be raised; but, as a rule, their crops were more diversified than was the case on the plantation. They were not usually wealthy, and their lands were likely to be of poorer quality than those of the great planters. But among them the pride of independent manhood and womanhood was strong. When it came to war, a large part of the Confederate army was drawn from them. No greater mistake could be made than to think of the people of the South as consisting exclusively of three classes — plantation owners, “poor whites,” and slaves; for one of the largest classes was the yeoman farmer. He was, indeed, a victim of the slave system, for his natural abilities and self-reliance were compassed round about by the ever-encroaching plantation.

The distribution of wealth. — How the slave and plantation system affected the distribution of the wealth of the South, the following figures will tell. In 1850 there were in the slave-holding states 9,569,540 people, white and black. Of these 347,525 were slave owners, of whom less than 8,000 were the great plantation owners with over 50 slaves. This was the aristocracy of the South. There were somewhat less than 3,500,000 slaves, who, with the families of the slave owners, would make up about 5,500,000 people. The rest were without slaves. They were the poor whites, the mountaineers, and the independent farmers. Probably one-half of the income of the South went to the 8,000 great plantation owners. They were the beneficiaries of the system; most of the rest were its victims. It was this 8,000 who ruled the South. They were the leaders and the politicians, the men who went to Congress and the legislatures. It was they who led in the demand for an extension of territory devoted to slavery, and it was they who led the rest of the South

through the Civil War. The system had made democratic equality impossible even among Southern white men.

The frontier state of the South. — Through force of circumstances that had imposed upon it negro slave labor and the plantation system, much of the South remained in a backward, frontier condition. The planter's sole notion of wealth came to be cotton; the main source of labor, negro slaves. It came to pass, therefore, that in addition to the waste of land, the other great resources of the South were neglected. She had thousands of horse power in her streams, but upon them were few mills. The cotton was at her doors, but except with domestic spinning wheel and loom, she made little yarn or cloth. Fine beds of iron and coal lay within her borders untouched. Gradually, contact with the world's advancing ideas was lost. Education was but for the few, the sons and daughters of the planters and merchants, and this could be obtained only in Northern schools or colleges or in Europe. For the great mass of the people the advantages of education were small or entirely wanting.

Slavery a white man's burden. — Who, then, were the chief sufferers from the slave system? Was it the whites, or the blacks? There seems to be but one answer possible. The South as a whole suffered, but chiefly the white South. Although the South was producing wealth faster perhaps than any other part of the country, it was a wealth which passed from the South and was distributed among the peoples of the North and the manufacturing countries of Europe. Slavery hurt the South not mainly because it was unproductive, but because it prevented the South from saving. Under the system the accumulation of capital was rendered almost impossible.

In another way the whites of the South were hurt. Because of the abundance of land and the lack of a labor supply, the only method of profitable cotton culture was to take advantage of the extreme richness of the soil. This could be done by an exaggerated form of extensive farming, under which the volume of production depended on getting a little from many acres rather than much from each of a few. The abundance of land,

therefore, and the fact that the negro was the only available labor supply, forced the plantation and negro slavery system on the South. But the fact that fortunes from cotton raising could be secured only on large plantations resulted in a constant struggle for the best lands. Only a few could succeed in such a struggle. There might have been lands enough to give everybody a farm, but not enough to give everyone a plantation. One of the greatest hurts received by the South, therefore, was the crowding out of many of the whites from profitable agriculture, and the lack of a fair and equal opportunity for all to share the natural resources.

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QUESTIONS

1. Show why natural conditions made slavery almost inevitable in the Southern states. Do moral and ethical considerations count for much as against economic demands? Had moral considerations anything to do with the disappearance of slavery in the North?

2. Summarize the forces working for and against the growth of slavery after the Revolution.

3. What was the influence of the cotton gin on slavery?

4. State the influences exerted by slavery on questions of expansion between 1819 and 1854.

5. Describe the slave trade after 1808. How did the increase in price of slaves affect the planter in Virginia? In Alabama? Demonstrate the relation between abundant land and slavery.

6. Show in what ways the slave system wasted the soil. In what other respects were the slaves inefficient? Did slavery prevent the development of scientific agriculture in the South?

7. Show how slavery prevented the growth of prosperous communities as distinguished from wealthy individuals. The South produced a very large part of the wealth of the country between 1800 and 1860, yet capital increased less rapidly in the South than elsewhere. Explain this. (CALLENDER, *Economic History*, 740-742, 757-760, 772-779.)

8. Describe the struggle for land which resulted from the plantation and slave system. Why was it impossible for many to succeed in this struggle? What happened to those who could not get a plantation?

9. Did slavery "degrade" labor in the South?

10. How did the plantation system and slavery affect the distribution of wealth?

11. What effect did the plantation system and slavery have upon the development of the other resources of the South?

12. What were the most prominent economic evils of the plantation system and slavery?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the cotton gin had a greater influence on American history than the reaper.

2. Resolved that slavery would have died a natural death if it had not been killed by the Civil War.

CHAPTER XVII

NATIONAL EXPANSION AND ECONOMIC GROWTH, 1840-1860

Introduction

The growth of territory

Texas

Oregon

The Mexican Cession

Migrations to the Far West

Oregon

The Mormons

The discovery of gold in California

The growth of the Middle West

The spread of population

Foreign immigration

Internal migration

Concentration of population in the East

The Eastern cities

Concentration of wealth in the Eastern cities

The cities of the Middle West

National unity through trade routes

The East, the West, the South

Development of railroads

Shifting trade routes

Influence of the railroads

The Mississippi River trade

The coastwise trade

Cotton

Other commodities in coastwise trade

Influence of the railroads on the coastwise trade

The foreign carrying trade

Inactivity after the War of 1812

Commercial treaties

The fishing and whaling industries

Revival of the carrying trade

American ships and sailors

Decline of the ocean carrying trade

Summary of the period 1825-1860

Introduction. — Until about 1840 Americans had been engaged very largely in what we may call experimenting. Their time had, for the most part, been spent in trying out new methods of manufacturing, agriculture, and transportation, with a view to increasing speed, eliminating labor costs, and establishing a system of production in great quantities. The old-fashioned methods of the jack-at-all-trades were rapidly giving way before organized and specialized industry.

Growth of territory. — While the older regions had begun to settle into the new industrial conditions, the nation continued to extend its possessions farther west. Consequently for another half century the frontier kept pushing westward, but always under the government of the United States, and under these auspices an outlet was still afforded for the restless, and an opening for the ambitious.

Texas. — It will be remembered how the frontier between Florida and the United States had been the scene of continual disputes and quarrels between Americans and Spaniards until the Florida treaty in 1819 gave this territory to the United States. In 1822 the United States recognized the independence of the Spanish colonies in Central and South America. Of the newly recognized states one was the Republic of Mexico. Soon afterward Americans began to enter the Mexican state of Texas, which the United States had given up by the treaty of 1819. There Americans and Mexicans quarreled much as Americans and Spaniards had been wont to do. By 1835 the American settlers had become strong enough to carry to a successful issue a revolt against Mexican authority. Then, in 1836 they created the Republic of Texas, which began a period of ten years as an independent and sovereign state. Meanwhile, slaveholders with their slaves poured into its borders, and the cotton plantation was established along the rivers flowing into the Gulf. Sentiment in favor of annexation thus became strong in the South, as it was also in Texas. The delay of ten years was due largely to a strong Northern influence which opposed expansion through the addition of more

slave territory. In 1845, however, at the close of Tyler's administration and after Polk had been elected on a platform favoring the acquisition of Texas, a joint resolution offering admission to the Union was passed by Congress, and the offer was accepted by the Texan government.

Oregon. — There were originally four claimants to the Rocky Mountain and Pacific Coast regions — Spain, England, Russia, and the United States. By the treaty of 1819 Spain gave up that part of her claim north of parallel 42° . Russia occupied the islands of the Bering Sea and the coast of Alaska, and had extended her explorations southward into California. But in 1824 she agreed to the parallel $54^{\circ}40'$ as the southernmost limit of her claims, leaving England and the United States the sole rivals for the Oregon Territory, lying between the parallels 42° and $54^{\circ}40'$. In 1818 the forty-ninth parallel had been fixed upon by these two countries as the northern boundary of the Louisiana Territory, and at the same time the Oregon country was left open to the settlers of either party on equal terms. Under such arrangement the matter stood for a quarter century.

For many years the Hudson's Bay Company had been running its fur-trading posts as far south as the Columbia River. Upon its activities the British hope of securing the territory rested. But the region had been visited by Lewis and Clark in their explorations up the Missouri River undertaken for the United States government soon after the purchase of Louisiana. Immediately after these explorations John Jacob Astor had formed a company to compete with the Hudson's Bay, and had established a post called "Astoria" on the Columbia River. About 1820 missionaries from the United States began to follow the traders, and other American settlers soon appeared. From this time on pressure was brought to bear upon the government for protection against the alleged exactions of the Hudson's Bay Company. In the presidential campaign of 1844 the Democratic party, in order to please the South, urged the admission of Texas, and to appease the anti-Texas people, advocated the seizure of all the Oregon Territory, adopting

as a campaign slogan, "54-40, or fight." On these two issues the party elected Polk. Then, having accomplished its vote-getting purpose, the Oregon plank was promptly scrapped, and in 1846 a compromise was signed with England by which the line of 1818 — parallel 49° — was extended to Vancouver's Sound.

The Mexican Cession. — With the exception of Texas, the lands south and west of Oregon and the Louisiana Territory — what is now California, Arizona, New Mexico, Nevada, Utah, and parts of Colorado and Wyoming — still belonged to Mexico. While we were negotiating with England in regard to Oregon, we were preparing to extend our sway over this region as well. Along the line between Texas and Mexico the Americans and Mexicans still were quarreling. The question which supplied the pretext for war was the possession of the strip of land between the Rio Grande and the Nueces rivers. The war started when the military forces of both sides entered this territory in 1846. It is needless to go into the details of the war, except to mention that during the two years while it lasted United States forces hastened to take possession of the immense Mexican territory mentioned above. In the treaty which closed the war this territory was ceded to the United States, and the Rio Grande was established as the southern boundary of Texas. The Mexican War has been condemned as a war of aggression, and the American government has been accused of deliberately planning to seize California. Whether these charges are true or not is of little concern. The people rather than the government decided the question. The occupation by Americans of all the Mexican territory north of the Rio Grande was inevitable — as inevitable, and as justifiable, as the occupation of the Ohio and the Illinois country and the crowding out of the Indians. Texas and California fell to the Americans because they were able to establish conditions under which the great resources of these districts might be safely developed. For the government and development of these lands the Mexicans were as unfit as the Indians.

Migrations to the Far West: Oregon. — Even before the new Western lands had been acquired, the resistless tide of population was beginning to overrun them. Soon after 1840 there began a widespread agitation in the press, in public meetings, and on the platform urging the government to take measures, regardless of the treaty of 1818 (p. 263), which had been renewed in 1828, for the forcible acquisition of Oregon. This agitation culminated in the election of Polk in 1844. Although the government did not take action as urged, the propaganda resulted in the formation of numerous emigrant parties of from two hundred to one thousand that took the overland route to Oregon.

Mormons. — While the Oregon migrations were taking place, similar movements were carrying bands of people into other regions of the Far West. In 1846 the Mormons, having previously been driven from Missouri and Illinois, where they had settled, began their memorable and picturesque hejira across the Western plains and deserts to the regions around the Great Salt Lake in Utah, at that time outside the limits of the Union.

The discovery of gold in California. — In 1848 gold was discovered in California on the South Fork of the American River, a tributary to the Sacramento. Very soon similar discoveries were made along the other short rivers which in great numbers run westward from the mountains and empty into the Feather, the Sacramento, and the San Joaquin rivers. The gold was found lying free in the sands of the beds of creeks and rivers, having been brought down by the waters from sources in the mountains.

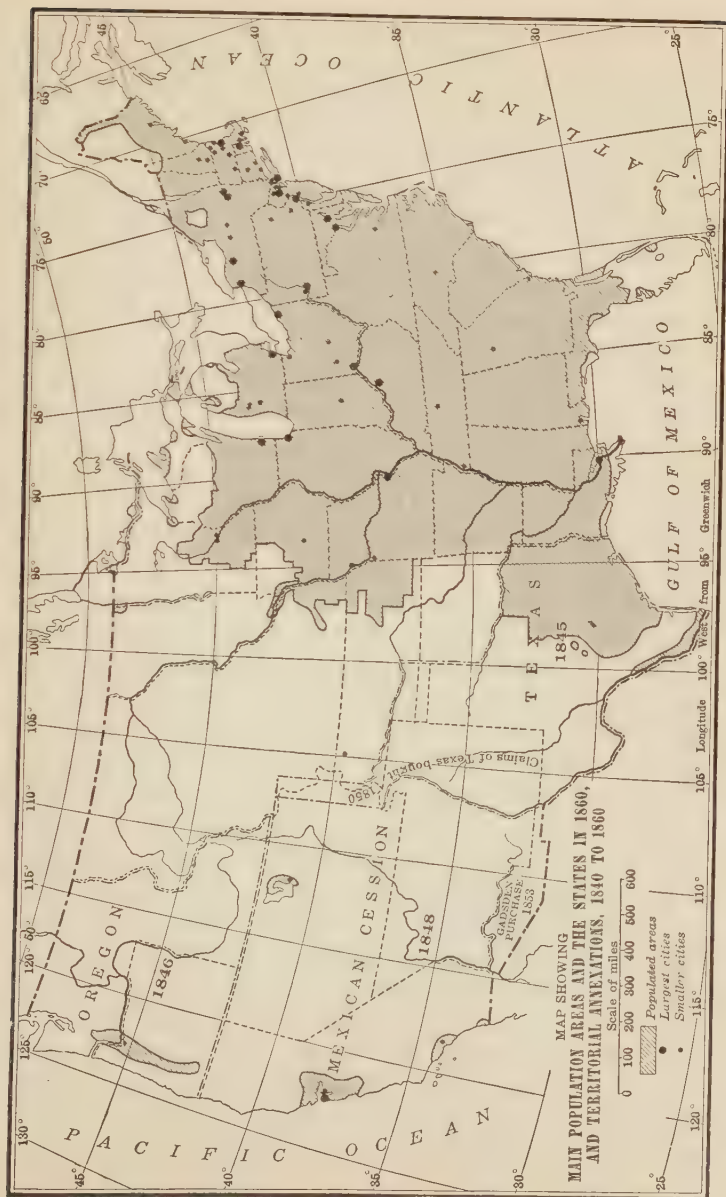
The news of the discovery soon spread through the states and then over the world. In a few months San Francisco, until this time a small village at the mouth of the Sacramento, became the meeting point of all the races of the globe. Soon after the rush began, this place became a city of thousands, a city, albeit, of tents, shanties, and other makeshift dwellings. Within a year, the territory having in the meantime been seized by the United States authorities, the people had

formed a state constitution without permission from the federal government, and in 1850 Congress passed the act admitting California to the Union. Although it is impossible here to go into details of the days of the "Forty-niners," it must be said that there is no more absorbing incident in the occupation of the continent by the people.

Growth of the Middle West: *The spread of population.* — Meanwhile, the spread of the main body of the population continued. By 1840 all the territory east of the Mississippi River had been cleared of the Indians, who had been removed into the lands west of Missouri and Arkansas. Indiana and Illinois, Alabama and Mississippi were now completely settled, and settlements had also extended widely over the southern peninsula of Michigan. Twenty years later people had crossed the Mississippi River from near its source to its mouth. They had reached westward through the Iowa territory — which in 1846 became a state — to the Missouri, and were rapidly crossing that river into Kansas and Nebraska. In Texas they had gone up the rivers from the coast far into the interior of the state.

Within a century the Mississippi Valley had passed from the Indian to the white man. Out of this area, sixteen new states had been created. The population, which had been about one hundred and fifty thousand in 1790, had increased to over one million in 1810, to about three million seven hundred thousand in 1830, and to over fourteen million in 1860. A new empire had arisen far greater in extent, and nearly equal in population, to that of the regions east of the mountains.

Foreign immigration. — Slowly the wanderlust was working a change in the character of the population of some of the older sections. Emigration from New England to the Western country constantly increased as the years went by. Until after 1850 the land of the Puritans was drained of its youth of native stock. Some of the states barely held their own in population. Those that gained got their increase from the foreign immigrants drawn thither by the mills. At first the



newcomers were mainly of the English stock, but after 1845 the Irish began to come in large numbers. In 1845 and 1846 came the failure of Ireland's potato crop. So dreadful was the hunger and so great and long continued the exodus, that within a few years the island lost a fourth of its population, and continuing migrations to America kept it stationary for a long time. At the same time the demand for labor in the mills of New England and the other Eastern states became increasingly strong. The incoming Irish took the place of the stock that was being drained into the West. Of the foreign born in New England and the Middle states in 1860, considerably over one-half were of this race. Nevertheless, large numbers of them passed on with the crowds that were making their way to the frontier.

German immigration again became important about the same time. The Germans were driven to this country by land hunger and political discontent. They desired not so much a job as independence, and consequently they went on to the regions of the cheap lands. In the Middle Western states, Ohio, Illinois, Indiana, Wisconsin, Michigan, Minnesota, and Missouri, about one-half of the foreign born were German in 1860. Of the slave states, Missouri was the only one having an important population of foreign origin.

Internal migration. — The unquenchable restlessness of Americans may be seen in the statistics of migrations from states that had been but recently the frontier. Between 1820 and 1860 from many of the Western states the people had begun to move in great volume still farther west. Already from a number of them more people were moving out than were coming in. During the decade 1850 to 1860, 476,966 people moved from other states into Ohio; in the same time, however, 593,000 who had been born within her borders moved away. In addition, many thousands who had been born elsewhere left the state. The total excess of emigration over immigration was 358,748. The same story is true in the case of Kentucky, Tennessee, Alabama, Mississippi, and Indiana. A great many

people, indeed, still migrated to these states, but more were leaving for lands of greater opportunity.

Concentration of population in the East. — Although the ceaseless movement of the thousands westward never halted, quite as remarkable — if less picturesque — developments were taking place east of the Appalachians. Here, too, in spite of losses by emigration, population grew rapidly. The states, especially those north of the Potomac, were fast becoming thickly settled communities. Certain sections, such as those in the vicinity of New York City, Philadelphia, Baltimore, and Boston, were rapidly taking on a metropolitan atmosphere.

Eastern cities. — Indeed, the most striking change in the character of the population in the Northeast was the speed with which cities and towns were overtaking the country. New York City, together with areas since annexed, had a population in 1860 of over one million, one hundred and seventy-four thousand, and within its vicinity there were many hundred thousands more. This community had more than trebled in number since 1840. During the same time similar growths had taken place around the other cities mentioned above. In twenty years the states from Massachusetts to Maryland had become, in large measure, urban instead of rural. In 1860 there were twenty-four cities each with over twenty thousand inhabitants within these eight states; there had been but eleven in 1840. Moreover, these twenty-four cities had over twenty-seven per cent of the entire population of the eight states in 1860; in 1840 they had had less than fifteen per cent. But even this does not tell the whole story, for there were many places, later destined to become manufacturing cities of large population, which had not by 1860 reached twenty thousand and yet were too large and too busy industrially to be called country towns.

Concentration of wealth in Eastern cities. — The wealth of these regions was also concentrated in the cities. By 1850 the value of the real estate of Boston was greater than that of all the farm lands of Massachusetts, and that of New York

City was equal to three-fourths the value of the farms of New York State. In fact, while the cities were thus increasing their values, the agricultural regions already had reached a point of deterioration, or at best were barely holding their own.

Cities of the Middle West. — City growth also began in earnest in the states of the Ohio and Mississippi valleys during these years. In 1840 the seven states — Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, and Missouri — had a combined population of slightly over four million people. In the course of twenty years this number had grown to over nine million two hundred and fifty thousand, an increase of about one hundred and thirty per cent. Serving this territory were Pittsburgh, Cincinnati, Louisville, St. Louis, Chicago, Milwaukee, Detroit, Cleveland, and Buffalo. Their aggregate population in 1840 was close to one hundred and fifty thousand; in 1860 it was nearly eight hundred thousand. At the earlier date their inhabitants comprised three and three-fourths per cent of the total of the seven states mentioned; at the latter, eight and one-half per cent. The growth of the nine cities, therefore, had been two and a quarter times as fast as the very rapid growth of the communities in which they were situated. Furthermore, as in the East, there were in these states by 1860 dozens of towns or cities of considerable importance, which had been in 1840 either nonexistent, or merely small villages.

Unity through trade routes: *The East, the West, the South.* — By 1860 the differences between the East, on the one hand, and the South and the old Northwest, on the other (p. 172), were more strongly marked than ever. The East, to a large extent, had become urban, a sign that it had concentrated more and more upon manufacturing and commerce. The South and the West, in spite of their growth in cities, were still rural. Their energies were expended upon the production of raw material and foodstuffs. Of these the East, to an increasing degree, had become the consumer, while it produced and imported manufactured goods for sale. Its local agricultural re-

sources steadily became less and less adequate for the support of the increased urban population.

The demand for Western produce was augmented by the repeal of the English Corn Laws in 1846. This meant that England had abandoned her attempt to feed her population and was henceforth to stake her fortunes upon her manufacturing and commercial skill, relying for food upon the world outside. This happened at the same time that the famine in Ireland created a great demand for foodstuffs in that island.

Development of railroads. — We have already seen how the enthusiasm for canal building cooled after the panic of 1837. It was not so with the building of railroads. They increased rapidly after 1840, and it was through them that the commercial opportunities afforded by the dependence upon one another of the three sections of the country were fully developed.

Already between 1830 and 1850 the skeletons of the main systems of Eastern roads had been laid. By 1860 there were at least four possible routes from the Atlantic seaboard to Chicago. During the decade from 1850 to 1860 a rapid growth took place in the Western and Southern states as well. By 1860 Lake Michigan was connected at Chicago with all the important points on the Mississippi from New Orleans northward. Lines also ran from Chicago to the interior of Iowa, to the Ohio at Cincinnati and Pittsburgh, and to the eastern end of the Great Lakes at Buffalo. Originally designed as feeders for the canals, they were fast becoming great freight carriers between all the large cities of the country. Moreover, in spite of a somewhat higher rate, they were proving that they could compete successfully with the Mississippi and the canals. Still, neither in the East nor in the West were there any great systems under single management, such as we are accustomed to today. The longest were not over five or six hundred miles.

The efficiency of the railroads was enhanced by the electric telegraph, perfected in 1835 by Samuel F. B. Morse. This instrument also helped to complete the unification of the

country. Although for several years it aroused little interest either among the people or in Congress, the latter finally (1843) was induced to appropriate thirty thousand dollars for setting up a line between Washington and Baltimore, and in 1844 the invention was put to its first practical tests. After that small companies were formed that set up connections between places near together, much after the manner of the building of the early railroads. By the middle of the century the railroads began to use the telegraph for train dispatching, and in 1861 the Western Union, which had already absorbed many of the smaller companies, completed a line of communication to the Pacific Coast.

RAILROAD DEVELOPMENT TO 1860 (MILES IN OPERATION)

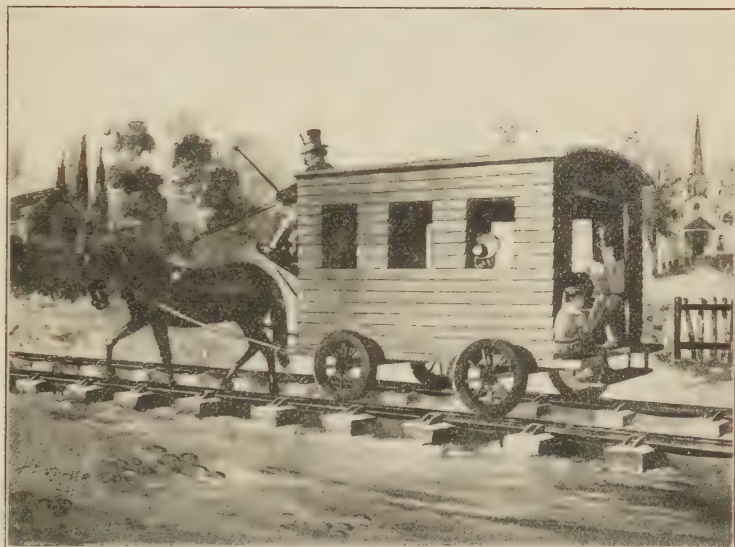
YEAR	NEW ENGLAND AND MIDDLE STATES	THE NORTHWEST, KANSAS AND MIS- SOURI	THE SOUTHWEST	SOUTH ATLANTIC
1850	5,709	1,276	416	1,620
1860	10,365	11,055	4,072	5,111

Shifting trade routes. — When canals were first built connecting the East and the West, the current of trade had begun to flow more freely, but mainly in the one direction from the East to the West to the South; thence via the ocean back to the East. Until about 1840 little Western produce went eastward over the canals. The grain carried by the Erie Canal up to that time came mostly from western New York. Receipts at Cleveland of goods westward bound generally exceeded by two or three times the value of the produce exported through this port over the Lakes.

The years between 1840 and 1860 brought a transformation in the flow of trade between the Northeast and the Northwest. More and more the direct route east began to be used by shippers of Western produce. Owing to the rapidly growing demand for foodstuffs, more and more use was made of the lakes and canals. By 1851 three-fifths of the Western surplus

reached tide water by way of the Erie Canal and the Hudson River.

Influence of the railroads. — After 1850 the railroads also began to carry produce eastward. To them the rivers lost much of their former trade. The roads were responsible for the opening of vast new areas of land and the building of large



BALTIMORE AND OHIO RAILROAD PASSENGER CAR, 1830

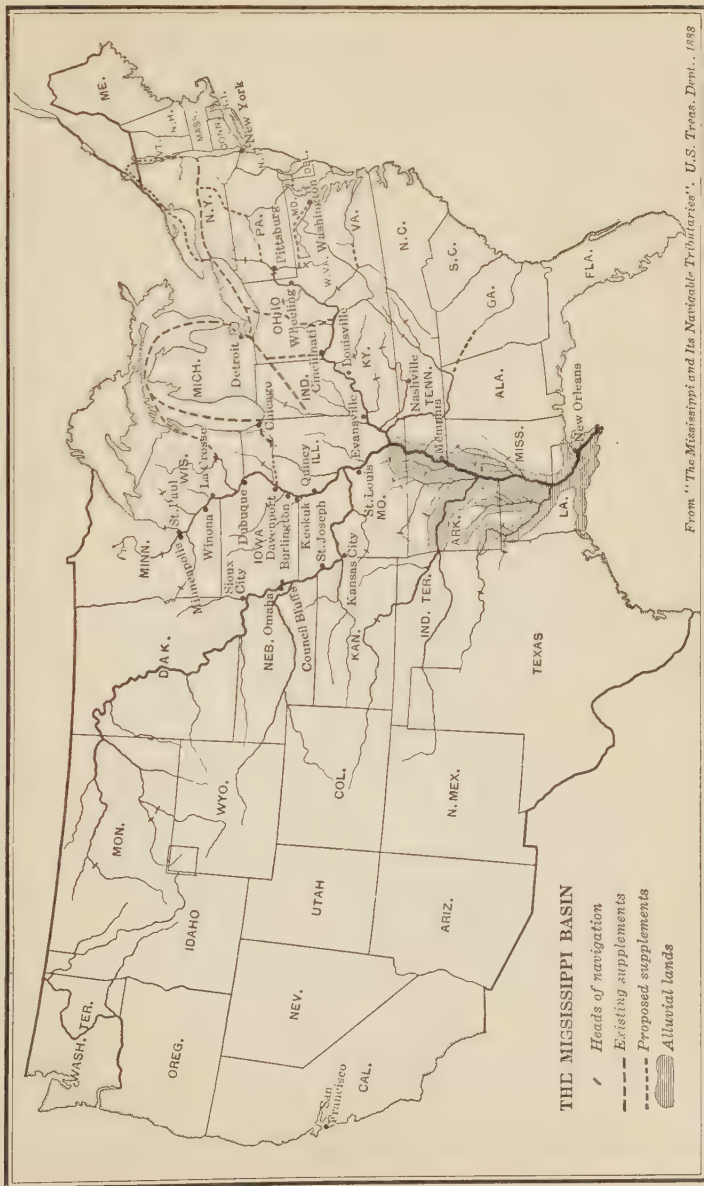
It can easily be seen that this type of "car" was not designed for through traffic.

cities. Freight tonnage constantly grew. In 1860, 293,520 tons of food products, mainly live stock, meat, and grain, went east over the New York Central, and 118,977 tons, chiefly merchandise, went west over the same route. At the same time three others, the Pennsylvania, the Baltimore and Ohio, and the Erie, were each transporting east and west nearly equal amounts. The Erie Canal, meanwhile, was carrying a greater tonnage than all the four roads combined. The railroads stimulated production everywhere as no other agency could have

done. Upon them depended the industries of the East and the agriculture of the South and West. But for them much of the country must have remained for a long time in a primitive and backwoods condition. The Mississippi Valley had finally come into its own as the primary granary and source of meat supply for the whole country. The East ceased to feed itself, and general farming there gave way to market gardening, dairying, and poultry raising in order to meet the demands of the cities for vegetables, milk, cheese, butter, and eggs.

Mississippi River trade. — In spite of the great traffic by canal and railroad, the trade via the Mississippi River continued to grow until it was ended by the Civil War. A large portion of the commerce that would have gone down this highway was undoubtedly diverted from it by the new transportation agencies, yet the population and production within easy reach of its banks were constantly and rapidly growing. Quite as rapidly was the South developing as a market for this increased output. For the South, therefore, the river continued to be the great carrier down to the Civil War. In fact, the years from 1850 to 1860 have been called the "flush" time for the river trade.

Yet here, too, a remarkable transformation had taken place. By far the greater part of the increase in the river traffic came not from the Upper Mississippi, but from the Lower. In 1820 the receipts at New Orleans of wheat, flour, corn, pork, whiskey, and other provisions from the Northwest had comprised fifty-eight per cent of the whole. In 1860, although the receipts of produce were greater, the ratio which they bore to the total had fallen to twenty-three per cent, while cotton had risen to sixty per cent. The Mississippi had come to be mainly a highway for cotton and sugar. Nevertheless, railroads built from Nashville and Memphis had taken much of the cotton raised in northern Alabama and Mississippi to the Eastern ports of Charleston and Savannah, and others running to Mobile had made of this place an important shipping point for this



staple. For the four years of the Civil War river traffic was suspended, and when the war ended, the railroads refused to give back what in the meantime they had taken away. Thus ended the career of the Mississippi as a great highway for domestic trade.

The coastwise trade: Cotton. — While the trade between the manufacturing and food-producing sections was undergoing such great change and growing in such volume, even greater developments had taken place in the commerce between the manufacturing states and the South. The basis of this trade was cotton. This raw staple supplied the mills of New England and the Middle states. They, in turn, supplied the Southerners with manufactured goods, with ships for carrying cotton, and with financial credit. As a result, there grew up a great coastwise fleet engaged in large part in carrying cotton north and manufactures south. After 1823 steam vessels began to be put into the coasting trade, and thus became rivals of the sailing fleet. With the coming of steam greater regularity of trips was possible. Soon, therefore, stated schedules were put into force between the important ports of the country, and the sailings increased in frequency as the trade grew.

As an illustration of what was taking place, in 1859 nearly fifty-five thousand cases of shoes were shipped from Boston to Charleston and New Orleans. During the same year seven hundred and sixty thousand bales of cotton were sent from Southern fields to the Northern mills. So great did our coastwise trade become that by 1852 its value was estimated at two billion six hundred million dollars — six times that of our foreign trade. Yet in 1800 the coasting trade had been very small, and most of our ships had been engaged in overseas commerce.

Other commodities in coastwise trade. — While cotton was the main support of the coastwise trade, nevertheless, as the years went by, it was increased by other commodities as well. In the decade from 1820 to 1830, Pennsylvania began to send her

coal north and south along the coast. Flour from the mills of New York State, Pennsylvania, and Baltimore, and other provisions also became important articles of shipment. Manufactures from the Northeastern states and from Europe were sent out in large quantities from Boston, New York, and Philadelphia for the Southern ports.

Influence of railroads on the coasting trade. — The last twenty years before the Civil War saw a decline in the relative importance of the coastwise trade, although its total volume continued to grow. Just as internal developments had caused the rise of this commerce, so, likewise, were they the cause of its failure to hold its former lead. Railroads began to take away traffic not only from the rivers, but from the coast. A large share of what they prevented from going down the Mississippi, they also took from the coastwise route. They diverted the grain and meat products of the Northwest and much of the Southern cotton from the water routes. Nevertheless, the coastwise trade continued to employ the larger part of the merchant shipping. It was, in fact, along with the fleets of the Great Lakes, to be for many years the salvation of the American merchant marine and of the sea traditions of the nation.

Foreign carrying trade: *Inactivity after the War of 1812.* — After the close of the European wars in 1814, American ships engaged in the foreign trade failed to resume the great activity of former days. The enormous growth during the period from 1793 to 1807, when the Embargo was laid, was largely of a mushroom character, dependent upon abnormal and temporary conditions. There was thus created a fleet too large for the available carrying trade when once peace was restored and foreign ships again were turned to their normal activities. The shipping industry also suffered because the new manufacturing enterprises attracted capital to themselves. As we have seen in the foregoing pages, capital also went more and more into the development of internal resources, and was drawn away from foreign trade and commerce.

Commercial treaties. — Nevertheless, some progress was made. In 1830, nearly fifty years after the end of the Revolution, England was induced to open to American ships the trade between the United States and the British West Indies. With many other European states commercial treaties were negotiated, giving reciprocal advantages to the ships of either party. By 1840, indeed, we find the commercial world gradu-



Courtesy of Allan Forbes, State Street Trust Co., Boston

A SHOAL OF SPERM WHALES OFF THE HAWAIIAN ISLANDS

New England whalers of the forties did much to acquaint the United States with the Orient. Whaling then was a dangerous industry, and the whales had a fighting chance.

ally relaxing many of its old trade restrictions. Nations were finding out that as trade became free, the amount available for all increased.

The fishing and whaling industries. — The fishing and whaling industries also continued to furnish their quotas of trained sailors and to serve as the foundation of shipbuilding enterprise. In the treaty of peace with England in 1783 Americans had been given practically the same fishing privileges as they had enjoyed while colonies in all waters around Canada and

Newfoundland, except those of landing to dry and cure fish in Newfoundland. The New England fishing industry had, therefore, continued to prosper. The privileges accorded by the treaty of 1783 were lost, however, when the United States went into the War of 1812, and it was not until 1818 that a



Courtesy of Allan Forbes, State Street Trust Co., Boston.

BOMB EXPLODING IN A WHALE: THE MODERN METHOD OF WHALE CATCHING

The romance and the danger of the game have departed and petroleum has usurped the place once held by whale oil.

new convention was agreed to, which gave to Americans certain inshore privileges in Canadian and Newfoundland waters. This convention has been the basis of American fishing privileges ever since, although it did not settle the differences that were constantly arising between the fishermen of the Dominion and the United States, and was modified from time to time by special agreements.

In spite of the constant wrangling the industry continued to grow steadily. The expanding American market gave it a new impetus from 1820 onward, so that the amount of fish exported became a smaller and smaller part of the total. The growing



Courtesy of Allan Forbes, State Street Trust Co., Boston.

BARRELS OF WHALE OIL WAITING FOR SALE AT NEW BEDFORD BEFORE THE CIVIL WAR

The oil would sometimes be stored on the wharves for years waiting for a favorable market. At intervals of a few months the owners would inspect their property, tasting the contents of each barrel to test its quality.

use of new kinds of fish also caused an expansion of the industry. Soon after 1820 Gloucester fishermen began to go out for mackerel, and within a few years these fisheries rivaled the cod, which had hitherto been the backbone of the industry. About the middle of the century began the herring industry,

destined to become one of the greatest branches of New England fishing enterprise.

By the middle of the century, also, the romantic whaling industry was at the zenith of its prosperity. Nantucket, from which most of the colonial whalers had come, had by 1820 given place to New Bedford. From here and other places along the southern shores of New England and from New York, hundreds of vessels set out yearly in a search of every corner of the earth's ocean surface. By 1820 the Pacific had become the favorite resort of the whalers, and by them new life was given to American trading and international relations in these regions. The interest of the United States in the Hawaiian Islands and the Philippines, for example, dates from soon after 1817, when Pacific whaling fleets returned with rich cargoes of oil.

Revival of the carrying trade. — After 1840 there again began a rapid expansion of the merchant marine. In the building of wooden ships, we have already seen (p. 29) that America had an advantage in the abundance of its forests. More ships were needed to carry the cotton crop to the English market, and foodstuffs to England, Ireland, and the West Indies. The exportation of manufactured articles, especially to the Orient, also increased greatly. During much of this period, too, conditions in Europe and other parts of the world were, to a slight degree, similar to those of the Napoleonic era. During the Crimean War, for example, the ships of England, France, and Russia were diverted to war purposes, and again America took advantage of Europe's quarrels.

American ships and sailors. — High-class ships also contributed to American supremacy on the seas. Not only could ships be built at small cost, but they were built for speed. From colonial days we had been evolving ships that could outmaneuver and outsail almost all other vessels. The colonists had brought the schooner to a high state of perfection. In the years of our greatest shipping activity, however, greater reliance was placed upon the square-rigged vessel. From 1841 to

1859 this type of craft gained its widest renown through the clipper ships, which were said to be the speediest sailing vessels afloat. The ships were sailed, moreover, by hustling, driving, chance-taking masters and men. Together, the ships and the men established, and maintained for a quarter century, a world-wide renown for our merchant marine, and were easily able more than to hold their own in competition with the foreigner.

Decline of the ocean carrying trade. — Yet in the midst of its prosperity, American shipping was on the verge of a great decline. The beginnings of the decay were due to the iron ship and steam power. Soon after 1850 the British turned more and more to the iron ship. For this they were well prepared, as their iron industry had advanced far by that time. America, lagging in the iron industry, stuck to the wooden sailing vessel, which gradually showed itself unable to compete with the steamship.

A final blow was struck by the Civil War. This conflict put an end to shipbuilding for the time being, and also resulted in the transfer of many a vessel to a foreign flag. Along with the ships the carrying trade that had once been ours went to the foreigner. What we had several times done, Europeans now did. This time it was our fleet that was absorbed in war, and Europe — chiefly England — began to usurp our commerce and carrying trade. After the war, instead of trying to regain lost ground, we turned to other pursuits. And so ended the "glorious" days of the American ship.

Summary of the period 1825 to 1860. — The union of the Western, Southern, and Eastern sections of the country established large-scale manufacturing in the United States. As the great domestic market for raw cotton, for cheap food, and for manufactures was opened up, a rapid growth and concentration of manufacturing in the East took place. The manufacture of cotton cloth absorbed much of the energy of the people of New England and the Middle states, until by 1860 this textile had become the national household fabric. Meanwhile

New England also became the source from which most of the nation was shod. Iron manufacture, both primary and secondary, also responded to the industrial demands, Pennsylvania and New York gradually becoming the centers of the industry. The demands of the great agricultural regions of the West stimulated the invention of agricultural machinery, and the manufacture of the new machines had reached considerable dimensions by 1860. The soil also supplied the raw material for numerous other manufactures, such as lumber, flour, and meat products.

While the market was the chief stimulus to the large growth of manufacturing, other features lent their aid. New machinery; the organization of the factory and the division of labor; the development of the machine tool and standardized, interchangeable parts; improvements in methods of treating iron; all had their share in promoting the industrial growth of the period.

The increasing use of the corporate organization also had an important place in the general development. Only through some such device could the savings of the people be concentrated in sufficient quantity to finance the constantly growing industrial organizations. Until nearly the close of the period, too, the most important industries were protected from foreign competition by a tariff, although in the closing years of the era industries had become so well established that a trial was made of diminishing the duties almost to the vanishing point.

The quickening industrial life enabled the government within twenty years after the close of the War of 1812 to pay off the debt which that conflict had greatly enlarged. As the people began to take in the boundless economic possibilities, their demands for capital for improvements, for investments, and for speculation began to pass beyond all bounds. The feverish activity was reflected in the great increase of state banking facilities and in the issuance by these institutions of large quantities of paper money. The people thus rapidly ran into debt, bringing on a situation that a series of accidents

turned into financial disaster in 1837. From this calamity it took a number of years to recover, but after those years were past, the nation went rapidly on as before with new enterprises. Meanwhile the government ceased to make use of private institutions for the safeguarding of its funds, establishing instead its own treasury. A revision of the coinage system was also made in an attempt so to equalize the value of the silver and the gold dollar as to enable both to circulate at the same time.

The concentration and organization of industry were accompanied by the beginnings of labor organization. Brought together by cities and factories, educated in the common school, and kept in touch with the course of events by newspapers and improving means of communication and transportation, many workingmen during the third decade of the century gradually drew together into unions the better to meet the changing conditions. Nevertheless, while the formation of local trade unions proceeded with some rapidity after the recovery from the panic of 1837, the formation of national labor unions had hardly begun before the Civil War. This was the formative period of labor organization—a period of experimentation. We see the workingmen making trial of politics, communism, and coöperation to gain their ends. Serious and long-continued, but unsuccessful, attempts were made to secure better methods of public land disposal.

While the experiments of labor organizations seemed to meet with but slight success, the actual conditions of work constantly improved. Between 1800 and 1860 wages nearly doubled. At the same time the general increase in production enabled the worker to live without increasing costs and constantly to better his standard of living.

The problems of the agriculturist were similar to those in other lines of work. The first task of the farmer was the conquest of the wilderness and the prairie. This task, with the aid of the inventor, he vigorously attacked. Between 1830 and 1860, therefore, as remarkable a revolution in agricultural

methods had been accomplished as in other industrial lines. Agricultural machinery made the farmer of the West a wholesale producer, a farmer for exchange and profits, instead of a drudge who barely managed to keep soul and body together. The colonial jack-at-all-trades had been transformed into a specialist in large-scale production.

While Western farming was being revolutionized, a change was also gradually taking place in the East. Here the cities changed the farmers into producers for the market, but the products were of a different sort from those of the West; they were the products of the dairyman, the poulterer, and the market gardener. The center of cereal production passed westward, but the Eastern farmer found still better profits in supplying with vegetables, eggs, and milk the growing markets near at hand.

Confronted with the work of subduing the wilderness and supplying rapidly increasing markets, farmers paid little attention to the conservation of resources. The colonial methods of getting rid of bothersome trees were still pursued, the soil was rich enough to yield for years without fertilization, and there was new soil waiting when the old gave out. Profits, indeed, lay rather in soil wastage than in soil conservation. The question of scientific agriculture, therefore, received but slight attention in America. Only the most rudimentary beginnings were made in such institutions as county fairs, an occasional agricultural society, and a few so-called agricultural courses. Federal and state aid to agriculture was negligible. Better care was taken of live stock, however, and much interest was shown in introducing new thoroughbred stock.

The industrial developments in England and in the Northeastern states, together with the cotton gin, reestablished the hold of slavery upon the South. The demand for wholesale production of cotton resulted in the spread of the cotton plantation farther and farther west. In this process the slave did what the machines were doing for the farms of the Northwest. The country, therefore, was divided into the "North" and the

"South" with all the bitter animosities thereby entailed. Upon the South itself the consequences were grave. The best lands were concentrated in a few hands, a large class of inefficient whites was developed, and the large slaveholder came to rule the South. The destruction of the soil was accentuated, and capital was drained away to purchase slaves, equipment, clothing, and even food.

The last two decades before the Civil War industrial life gathered momentum. The acquisition of Texas, Oregon, and the Mexican Cession completed the continental expansion, and the people, lured as ever by the spirit of adventure, by land, and by gold, proceeded to the new regions as eagerly as they had gone into the old. Meanwhile the intensifying industrial development was more and more reflected in the growth of cities and the concentration of wealth. Binding all together in a growing network were the railroads, and these were augmented by the fleets on the rivers, the lakes, and along the coast. During these years, too, the driving power of the new nation was displayed to the world by an aggressive ocean carrying fleet.

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QUESTIONS

1. Summarize the steps by which Texas became a part of the territory of the United States. Had Texas ever previously belonged to the United States? (CHANNING, *Students' History*, 340, 376-377.)

2. By what acts and treaties were the boundaries of the Louisiana Territory established? What countries have laid claim to Oregon? Trace the steps by which all other claims were surrendered in favor of the United States. What was the strongest point in the claims of the United States?

3. What states were created out of the Mexican Cession? Was the Mexican War a war of conquest? Can you justify the seizure of Mexican territory?

4. Describe the migrations to the Far West that were taking place between 1825 and 1850. What were the purposes of these migrations? Note on the map the frontier line in 1840 and in 1860. What were the causes of the increased foreign immigration after 1840? To what parts of the Union did most of the immigrants go? Why did Westerners keep moving west?

5. Describe the transformation that was taking place in the states of the Northeast between 1840 and 1860. Did the Eastern cities have any effect on the economic growth of the South and the West? What do the statistics of wealth indicate as to the condition of agriculture in the East? How was agriculture in New England affected by the settlement of the Middle West? By the opening of the Erie Canal? By the growth of the factory system? Making use of the information found in this chapter and in chapters 3, 6, 10, 11, and 12, trace the growth of an American community from the frontier to the industrial stage. In 1860 what part of the country would you call industrial? What parts agricultural? What parts frontier?

6. Show how the Northeast, the South, and the Middle West reacted upon one another owing to differences in their stages of development. Which section was producing the greatest amount of wealth?

7. Describe the development of railroads between 1840 and 1860. What effects had railroads, lakes, and canals on internal trade? Enumerate the results following the establishment of the railroad system.

8. Describe the Mississippi River trade in 1860. What changes had taken place in the origin and the character of the goods transported? What effects on Mississippi River trade had the railroads? The Civil War? How would it have affected the Union cause if the main outlet for Western produce had been the Mississippi River in 1861?

9. What products, what invention, and what law were the bases of the growth of the coastwise trade? What does the growth of internal com-

merce show as to our dependence on the foreigner? What influence did railroads have on the coastwise trade?

10. What were the reasons for the decline of American ocean carrying trade after 1815? What caused its revival after 1840? What were the causes of its decline after 1860?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the interests of Mexico and the United States would both have been better served if the United States had taken all of Mexico at the end of the Mexican War.

2. Resolved that canals and railroads were of more account than the Constitution in unifying the nation.

PART IV. COMBINATION, ORGANIZATION, REGULATION: THE END OF THE FRONTIER

CHAPTER XVIII

THE CIVIL WAR: THE NEW INDUSTRIAL REVOLUTION

Introduction

The Civil War and the North

Civil War legislation

Purposes and results of Civil War legislation

The purchase of Alaska

The Civil War and the South

General view of the period 1865 to 1920

Machinery, science, and improved methods of production

Increasing intensity of competition

Efforts to get rid of competition

Combinations and American self-sufficiency

Increasing importance of organization and finance

Interference of the public with business and industry

The revolution among farmers and workingmen

Introduction. — Although the Civil War was fought by the people of the United States alone, and was a small affair in comparison with the struggle in which most of the nations of the world from 1914 to 1918 were engaged, yet in many ways the conflict of the 'sixties changed the economic life of the people of the United States much as the latest war has altered living conditions for all the world. During the struggle among the nations, we know that prices rose very high and that millions of men gave up work to fight. Other millions, both men and women, turned from their peaceful occupations to those connected with war. Immense new factories were built solely for the production of munitions, while almost all others gave up many of their usual functions to do similar work. Meanwhile, the production of food became daily a more and more vital problem. Vast areas were so ravaged that it will require

years before they are restored to the place which they once occupied. Governments borrowed — or printed — huge sums of money which they must later repay. The powers of Central Europe were ringed in by the fleets and armies of their enemies until hunger, cold, and disease reduced the vitality of all their people, and probably caused more deaths than did the battles. And now that it is all over the nations engaged have had to face the problem of restoration — of paying for the orgy of destruction.

If we picture the events that have so recently taken place and with which we have all been in more or less close contact, we can more clearly see in our minds the events of the dozen years following 1860. The main difference between the two pictures is that one is smaller than the other.

The Civil War and the North. — In the North the war greatly stimulated many industries. Prices rose constantly, owing to an inflated currency and, in the case of certain commodities, to an increased demand. On account of the need of cannon, muskets, and ammunition, iron had to be provided in huge quantities. The mines around Lake Superior, which had barely been touched before the war, were opened in large numbers. Hence, many new furnaces and forges were established in Pittsburgh and other iron centers. Greater rapidity in production than had ever hitherto been reached was attained during the years of the conflict.

The needs of the military for clothing likewise resulted in pressing demands for woolen garments, blankets, and boots and shoes. Factories for making woolen cloth multiplied as never before. By the end of the war the facilities for manufacturing this commodity had increased by about two-thirds. The clothing industry grew in a similar manner centering in New York, Philadelphia, Baltimore, and Cincinnati. In this trade, too, the sewing machine did much to take the place of labor which had been drawn elsewhere. The boot and shoe industry moved into the factory, and machinery rapidly took the place of the old-fashioned shoemaker. In all these enter-

prises the profits were such as to surpass the manufacturer's most optimistic dreams. Dividends of from ten to forty per cent were paid by the woolen mills, and equally large earnings were made in other industries.

In spite of the withdrawal from the farms of large numbers of men, agricultural production did not pause. In the midst of the conflict cereal production increased rapidly from year to year. The steady advance of farming in the face of such difficulties was made possible, as we have seen elsewhere, by the greatly improved methods of planting, cultivating, and harvesting brought about by the machines that had been perfected during the twenty years preceding the war. To supply the machines, factories for the purpose were enlarged and grew rapidly in numbers. It was between 1860 and 1870, indeed, that the foundations of one of our greatest industries — the manufacture of farm machinery — were greatly strengthened.

Under the pressure of the vital requirements of the Union, men were thus learning better how to produce goods quickly and in huge quantities. They were learning the economies and other possibilities of larger factories, blast furnaces, rolling mills, and foundries, and of more rapidly running machines. The lessons acquired at this time were not to be forgotten when peace should come once more. Artificial power during these years finally came into its own. Coal was more and more used to run the factories and the ships — a work that it had been doing for twenty years on the railroads. In the blast furnace, too, it had come to be practically the only fuel. With insignificant exceptions in frontier and other out-of-the-way places, the domestic system gave way before the machine and the factory.

Civil War legislation. — While the war was in progress, Congress passed a number of significant acts. The most important were the Homestead Act (1862), the Morrill Act (1862), the National Banking Acts (1863–1864), tariff laws, and acts chartering the Union and Northern Pacific railroads. All of these laws were partially war measures, but they were much more

besides; for most of them were intended as permanent measures and became parts of a fixed policy. Some of them — notably the Homestead Act and the chartering of the Pacific railroads — had long been urged, but had always failed of passage on account of sectional differences. The fact that the government was wholly in the hands of the Republican party, unhampered by opposition from Southern members, made easy the passage of laws, which, at another time, would have met bitter opposition.

Purposes and results of Civil War legislation. — It is not necessary to go into the details of these measures at this point, as they are to be dealt with elsewhere. We should, however, point out the changes of policy which they produced. As a war measure the Homestead Act was meant to encourage enlistment and provide for discharged soldiers. As a permanent policy the government here gave up the idea of deriving revenue from public land. Henceforth farms of a hundred and sixty acres were to be as free as water and air to any citizen who would occupy and improve them. In the Morrill Act Congress at last recognized the need of agricultural and scientific education. Here was laid the foundation of most of our state agricultural and technical colleges.

The National Banking Acts brought to an end the confusing and dangerous state bank notes by taxing them out of existence. As a permanent policy they set the issues of bank notes upon the solid foundation of gold and government bonds, and this enabled them to circulate anywhere in the Union at their face value. By these acts the era of the wild-cat banks was brought abruptly to an end. As a war measure, it was intended to make easier the issue of bonds, although in this respect the act did not come up to expectations.

The Civil War was directly responsible for the establishment of high protective tariffs — a policy that has persisted for over a half century. Early in the war Congress began to lay import duties, and as the need of revenue grew, the tariff rates and the number of commodities affected steadily mounted. By

the end of the struggle many articles — notably cotton, woolen, silk, and iron manufactures, and raw wool — were protected from foreign competition by duties so high that no one would have dared propose them at any time other than when the country was in dire need. It will be remembered (p. 201) that in 1857 the laws had been so revised as to place the nation almost on a free-trade — certainly on a low-tariff — basis, and at that time this policy bade fair to become permanently established. The needs of the government between 1861 and 1865, however, were so increasingly pressing that there was no difficulty in securing what was intended as merely a temporary reversal of the tariff policy. By 1865, too, internal revenue taxes had been placed upon almost every article produced or consumed by the people. As these taxes were applied, further protective duties on manufactures had to be laid, in order to “compensate” the manufacturer for the internal taxes which he paid on his raw materials and his product. An income-tax law was also passed and the tax was paid with little protest.

Within a few years after the end of the war most of these tax laws had been repealed. Only two of importance remained — the internal revenue taxes on a few articles, such as alcoholic liquors and tobacco, and the tariff. The latter refused to come down. Although the original excuses for its imposition had gradually disappeared, the high rates of the war period did not change. The attempts to reduce them (1867–1872) were failures, and later on some of them were even increased. The manufacturing interests that had prospered so greatly under the protection of war and high tariffs, although they could not prevent the ending of the war, proved powerful enough to keep the tariff wall in good condition. Their task was rendered easier by the fact that the greatest influence against protection — the South — had been effectively weakened by the war.

The Purchase of Alaska. — Two years after the close of the war the United States purchased Alaska from Russia, thus

concluding several years of negotiations. This acquisition included not only continental Alaska but many islands of the Pacific as well. At the time of the purchase not much was known as to the value of what we had bought. Since then, however, great wealth in coal, gold, and forests has been proved, the fisheries have become among our most important, and the islands, being the rendezvous of the seals, give the United States an especial interest in these animals. More important than the resources, perhaps, was the fact that by the purchase this country took its first step into the Pacific, where, there can be little doubt, a large part of the world's future history is to be made.

The Civil War and the South. — The spur which the war had applied to Northern activities was not felt in the South. Here all was prostrate in 1865. Literally, the whole white manhood of the Southern states had been drawn into the army. Probably in no nation involved in the great world war were the people — men, women, and children — more completely surrendered to war purposes. It is estimated that a third of the men were destroyed or incapacitated.

Furthermore, those who survived returned home only to face the ruin and devastation that always follow battling armies, invasion, and years of neglect. Many an untilled plantation had grown up to weeds, while the labor force had often become widely scattered. Railroads were in ruins — the rolling stock gone, the tracks torn up or rusted away. What factories there had been were destroyed or closed. Bankruptcy stared in the face many men formerly of great wealth.

Nor was economic ruin the only problem faced by the Southerner; there was in addition the question of what to do with the negro. Wholly unprepared to meet instantly the new conditions of the change from negro slaves to negro freemen, the people of the South had for years to grope blindly for the solution of this, their greatest problem. It has, indeed, proved to be a task that time alone can perform. That there was slow progress in reconstruction, therefore, is not surprising.

Nevertheless, on future pages we shall see that after years of struggle, rapid advancement began to be made, and that with the closing years of the nineteenth century the South started upon a new and prosperous era.

General view of the period 1865-1920. — Having taken this very brief glance at some of the results of the Civil War, we are now ready to continue our story of the economic development of the people, and to show how they took up the work interrupted in its orderly progress by the conflict. That we may better grasp the details that are to follow, however, it will be well to take a broad, general view of the whole period lying between 1865 and 1920, so as to get an idea of the direction which the industrial changes have taken.

The economic developments of the years between 1865 and 1920 may be treated under the following heads: (1) the rapidly increasing application of machinery, scientific principles, and improved methods to all lines of endeavor, (2) an increasing intensity of competition, (3) attempts to get rid of competition by means of widespread organization and combination, (4) a closer economic relationship with foreign nations, (5) the assumption by management, organizing ability, and finance of a far greater importance in the conduct of industry than they had once possessed, and (6) interference by the public with business and industry.

Machinery, science, and improved methods. — As we progress in our study, we are to note how greatly production has increased both in speed and quantity. In this respect we shall see but an expansion of the Industrial Revolution which had begun before the Civil War. A continually greater reliance has been placed upon machinery and new processes for doing work. The stream of invention has swelled without interruption, the machine and artificial power not only more and more taking the place of human labor and skill and hastening the speed of production, but also introducing large numbers of industries that were absolutely new. Industry has continued to move from the home and the small shop into the factory. Men and



women have poured from the household into the factory, the store, the counting-room, and dozens of other places of industry.

Increasing intensity of competition. — In 1865 industry in the United States was still governed by the doctrine of laissez-faire. The controlling idea was that industry and business needed no regulation by law, but would regulate themselves if left freely and without interference to operate under the natural laws of competition — of supply and demand. A corollary to this doctrine was the idea of individual freedom — the right of every man to direct his industrial skill, his competitive powers, and his business sagacity in ways that would bring the most to himself regardless of how his acts affected others, as long as he kept within the letter of the law.

Hence, we shall find competition freely proclaimed as the life of trade, and fiercely, relentlessly, and oftentimes ruthlessly, practiced. Especially true is this of the first quarter century after the end of the war. These were the years when men were searching for and seeking to establish claims upon the enormous resources of the country still untouched — the mines, the forests, and the agricultural lands. They were the years, too, of the building of hundreds of towns and cities, thousands of factories and other industrial plants, and countless miles of railroads. Competition for a favored place at these offerings of wealth was uninterrupted and keen.

Efforts to get rid of competition. — Nevertheless, even while men were thus fiercely competing with one another in the industrial world, they were, especially as the nineteenth century drew to a close, to an ever-increasing degree trying to work out conditions that would do away with competition. Contradictory as this seems, we shall see that such efforts were, in part, but the natural outcome of unrestricted competition. Without going into details at this point, competition became so keen that industries were killing one another, and their lives depended upon the establishment of harmonious operation. Consequently, the idea of coöperation, which means "operating together to one end," began to take its place beside and

supplant competition, which means "common strife for the same object."

This much-desired harmony we shall see brought to pass in various ways. Often it was partially secured by the natural growth in the size of individual plants, by the absorption of many weak concerns by a single strong one, or by a combination, voluntary or involuntary, of antagonistic companies. Such growths often extended so far as to bring under one management not only rival industries, but many others that were only slightly or incidentally related.

Combinations and American self-sufficiency. — At the beginning of the nineteenth century the production of our huge industrial organizations had become too great to be absorbed by the domestic market. New markets, therefore, became necessary, and we began to turn more and more to the foreign field. This demand of the industries for wider markets was to result in a gradual but deeply significant change in national policy.

It will be remembered how, soon after the close of the War of 1812, the United States had taken a position of neutral observer of the affairs of foreign countries, and of policeman guarding the Western Hemisphere against outside aggression. This position the nation had strictly adhered to for over half a century. Through the need of expansion felt by our industrial and commercial interests, however, we began slowly to emerge from our seclusion. The country had come to a point where it could no longer be sufficient unto itself. The need of coöperation among the different parts of the world, indeed, became more and more apparent not only in America, but everywhere else as well. Only in this way could the demands of one section for the hundreds of commodities which it did not produce, but which might be secured by trade from elsewhere, be met. This connection with the outside the great industrial and commercial organizations were well fitted to establish.

Increasing importance of organization and finance. — It will readily be seen that such a gathering in of plants and of dissimilar industries must involve an extremely close attention

to organization and management. More and more important have become the men who possess the ability to manage and direct such vast undertakings.

Coöperation of industry by means of combination demanded also a control of large amounts of capital. The capital resources of the country were thus concentrated to an increasing degree in channels where they might most readily be used to bring about concentration of industrial control. We shall see, therefore, great and revolutionary developments in banking. The institutions for handling money and supplying credit grew in size at a rate equal to that of the industrial organization. Through these agencies the financial resources of the nation were collected, so that the necessary backing for industrial combination could be secured.

As a result the banker has become more and more involved in the industries. He has supplied not only the financial resources, but much of the organizing ability as well. He has done a very large part of the work of bringing competing organizations together. In addition to recognized banking functions, therefore, he has had more and more to do as a director of industrial enterprises.

Interference of the public with business and industry. — Beginning about 1880 searching public criticism of the conduct of business began to be made. The very methods of accomplishing the union of industries, which we have just outlined, were largely responsible for the growth of the idea that these combinations should be regulated by the people. Oftentimes when getting rid of competition and substituting coöperation in its place, industrial leaders committed acts that were tyrannical, unjust, dishonest, and injurious to many people. Moreover, even when such was not the case, many began to fear the enormous power of the great combinations. The feeling grew stronger and stronger that industries, business, and natural resources should afford equal opportunity to all. Upon such a basis we shall see rapidly growing after about 1880 a great body of laws — both federal and state — with the purpose of

regulating and restraining the powers and activities of the industrial, financial, and commercial interests.

The revolution among farmers and workingmen. — Coöperative movements have not been confined to manufacturers, traders, and bankers. Similar developments took place among laboring men and farmers. Local agricultural associations, as described in chapter fifteen, continued to grow. In addition, many national organizations were formed. More and more we shall see the farmers acting together so that they may dictate the terms under which they shall raise and sell their produce. Among the laboring men coöperation likewise took the place of competition in a rapidly spreading unionism. Here again the idea was to persuade or compel workers to cease competing with one another for their positions, so that by acting in a body they might dictate the terms of their employment.

With these words of introduction, we are ready to take up in detail the great expansion of our economic life since the Civil War, and to follow the revolution in ideals that has taken place.

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QUESTIONS

1. Why do prices rise in war time?

2. What industries are most stimulated by war? How did machinery help the North during the Civil War? In what ways did the war hasten the end of the domestic system of manufacturing? Are industries created by war likely to prove permanent?

3. What were the important acts of legislation passed by Congress during the Civil War? What was the importance of each of these acts as measures of war and of peace?

4. What were the chief sources of national revenues during the war? What were the permanent results of the Civil War tariff measures?

5. What were the conditions in the South caused by the war? Why did not Southern agriculture and manufacturing feel the same stimulus due to the war as they did in the North?

6. Name five phases of economic development since the Civil War. What results have come from machinery and scientific methods? Explain why competition has been considered the life of trade. Can you see how competition might also be the death of trade? What is the

meaning of competition? Of coöperation? How has coöperation been brought about in many industries? What changes in the foreign policy of the United States took place partly owing to industrial developments since the war?

7. Show how the bankers have been concerned with the development of the industries.

8. Why did people begin to distrust business and industrial combinations?

9. What revolution has been taking place as to the conduct of business?

10. In what ways has coöperation taken the place of competition among farmers and laborers?

11. What are the difficulties in the way of coöperation between the employer and the employee, and between the farmer and either of the other two groups?

SUGGESTED QUESTION FOR DEBATE

1. Resolved that all men, women, and children, all natural resources, capital, and industrial plants should by law be drafted into the military service in time of war and that no one should be permitted to receive in interest, rent, profits, or wages, more than the common soldier.

CHAPTER XIX

BASES OF INDUSTRIAL DEVELOPMENT — THE NATURAL RESOURCES

Introduction

Coal

The place of coal in American industry

The coal resources

Petroleum

Oil a source of light and power

The oil resources

Water-power resources

Iron

The place of iron in industry

Iron-ore resources

Geography of the iron-ore deposits

Copper

The consumption of copper

Copper resources of the United States

Forests

The forest resources

Exploitation of the forests

Forest conservation

Introduction. — The economic changes which we have attempted to outline in the preceding chapter took place primarily because of the vastness of the natural resources which were at hand waiting for development. It was not until after the Civil War that the people began to utilize these resources to their fullest extent. In beginning our study of the years following the war, therefore, let us take stock of some of the more prominent of the resources, in order that we may comprehend more fully the great stake for which men were competing.

Coal: *The place of coal in American industry.* — Foremost among all the resources in availability and quantity stand those

for the production of power. We have seen that the industrial revolution of the first half of the nineteenth century resulted from the application of power to machinery. The developments of the second half of the century depended to an even greater degree upon artificial power.

Up to the present day coal has been our greatest single source of power. A hundred and seventy-five years ago the use of coal in the industry was almost unknown in any part



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LIFE SIZE MODEL OF A COAL MINE AT THE PHILADELPHIA COMMERCIAL MUSEUM

of the world. Within that short time the modern industrial world has arisen, and most of the power has been supplied by coal. The years following the invention of the steam engine have often been designated as the "age of steam." They were, in fact, the age of coal, which made the steam. Since 1860 men have often spoken of the age of steel, yet coal produced the heat by means of which the steel was refined from the ore. We hear in more recent years, also, of the age of electricity, but this agency, too, is produced in large measure by coal.

Statistics of production show how steadily coal grew to be the mainstay of modern life. In this country its production had hardly begun before 1840. Not until 1837 had we produced in any one year as much as one million tons. In 1840 there were about two million tons mined, or a little under one ton for every eight people. After that date coal was used more and more in factories, and rapidly took the place of charcoal in blast furnaces. After 1850 it became the fuel for locomotive engines. It was not until about 1880, however, that more than one ton per person was mined annually in the United States. Thirty years later there were being taken out each year five tons for every man, woman, and child in the country, and during the Great War this production was increased by nearly one hundred million tons annually. Most of this great production goes to drive the locomotive engines, the ships, and the machinery of the factories.

The coal resources. — The country has an enormous reserve supply of this source of power. It occurs widely in immense areas. The principal deposits are those in the Appalachian regions reaching from northwestern Pennsylvania southwest into Alabama; in the Middle Western states from Indiana to Iowa and extending south into Texas and Louisiana; in North Dakota and Montana and in scattered localities throughout many others of the Rocky Mountain states. As a whole the workable coal fields extend over an area of nearly five hundred thousand square miles. The quantity of coal within these fields, according to the estimates of the United States Geological Survey, is over three million million tons. Much of this, to be sure, is of an inferior quality and not available without improvements in our present methods of use. There is little doubt, however, that when the need arises the improvements will come. Much of it, too, will be wasted in mining as we now mine. Improvements, doubtless, will be made in this respect as well, and a large part of the waste will be eliminated.

Petroleum: *Oil a source of light and power.* — Petroleum began to attract attention in this country shortly before the middle



of the nineteenth century, although it had been known for ages in many parts of the world without having been put to industrial uses. It was first sold by druggists of western Pennsylvania as a patent medicine. After the striking of the first "gusher" in 1861, it began to be used as an illuminant, and for several decades was the light of the world.

Very soon after the beginning of production on a comparatively large scale, patents for oil-burning fire boxes suitable for engines began to come out. Early in the 'seventies steamers on the Caspian Sea, where the great Russian oil fields are situated, began to burn oil exclusively; and since that date its use as an engine fuel has spread rapidly, especially in regions inaccessible to coal. The first locomotive engine burning oil was run on Russian roads in 1882, and since then it has come to be used almost exclusively in the United States on the roads of the Southwest and the Pacific Coast. It has likewise grown more and more in favor on ocean-going steamers and in the navies of the world.

Its greatest utility as a source of power, however, has come from the light oils refined from the crude, such as gasoline and naphtha. With the perfection of the gasoline engine in the 'seventies, oil came into its own not as a substitute for coal, but as an auxiliary to it. The automobile and the auto truck have helped to solve the most expensive kind of transportation — that which must be done over ordinary roads. Oftentimes the greatest expense in getting produce from farm to market, even when the farm was in the West and the market in an Eastern city or Europe, was the cost of transportation over the few miles between the farm and the railway station. Within twenty years the loneliness of country life has largely disappeared. Furthermore, a miniature factory has been brought to thousands of farms and village mechanics' shops by the use of the power afforded by the gasoline engine.

The following table shows how the abundance of oil has created a large new industry since the opening of the nineteenth century:

GROWTH OF THE AUTOMOBILE INDUSTRY

AUTOMOBILES (PASSENGER)			AUTO TRUCKS	
DATE	NUMBER MANUFACTURED	VALUE	NUMBER MANUFACTURED	VALUE
1904	21,281	\$23,634,000	411	\$947,000
1909	127,731	159,918,000	3,255	5,230,000
1914	543,679	413,859,000	25,375	45,098,000

Since 1914 the production has gone on rapidly, and in 1919 there were registered in the country over seven and a half million automobiles and trucks.

Oil resources. — As in the case of coal, the oil fields of the United States are very productive and cover wide areas. The first “gusher” in 1861 proved that wells bored in the right places would produce large quantities of oil. Hundreds of barrels per day flowed from this first experiment. There followed during the next few years a boom in oil. A thousand oil stock companies were floated in the 'sixties, most of which soon went bankrupt. For about thirty years the western Pennsylvania field was the chief producer of the country.

It was soon discovered, however, that the active days of an oil well are but few. The gushers do not last long as such, and soon a well settles down to a steady but gradually diminishing flow. The average length of an oil well's life is from six to seven years. This fact, together with many new uses that were being found for petroleum products, stimulated oil men to search the country over and constantly to bore for new wells. These activities resulted in the discovery of many new fields. In the 'eighties oil fields around Lima, Ohio, were discovered, and soon thereafter this state surpassed Pennsylvania in the production of oil. Since then discoveries have been made in West Virginia, southern California, Indiana, Illinois, Texas, Kansas, Oklahoma, and Louisiana.



Courtesy of Los Angeles Chamber of Commerce.

A CALIFORNIA OIL FIELD

Oil is so abundant here and in some other Western states that it serves the same purposes as coal farther east.

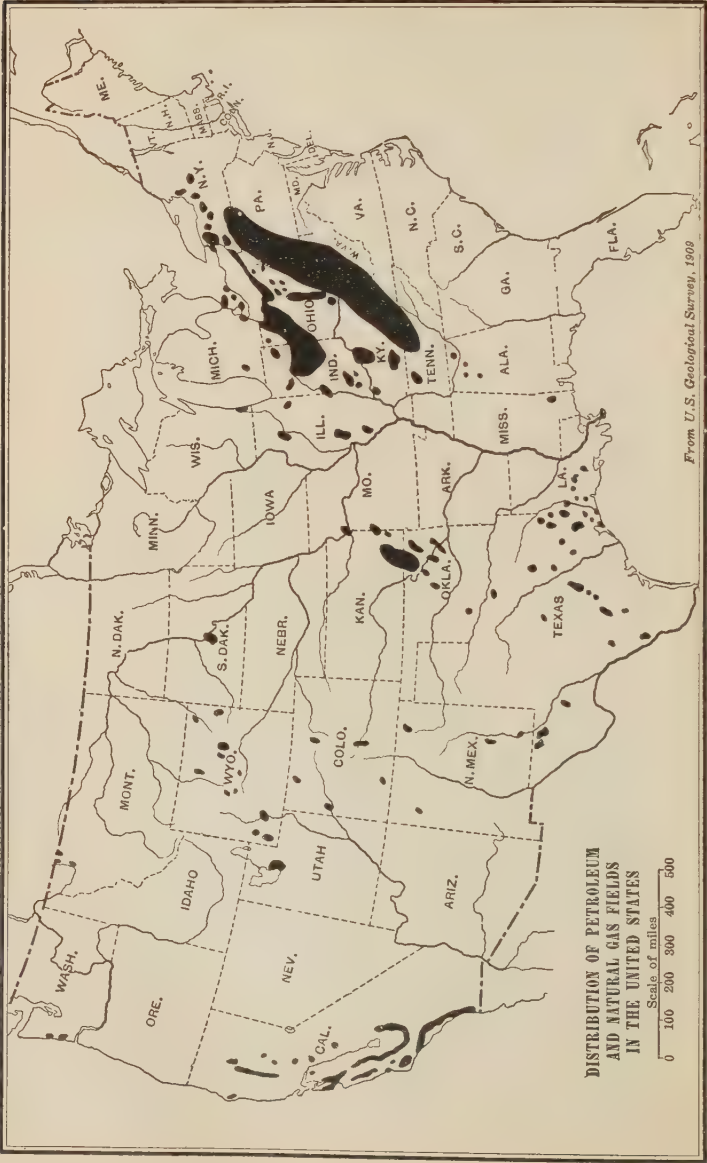
The productiveness of most of these fields has been astonishing, and some phenomenal wells have been opened. One at Beaumont, Texas, yielded for a time seventy thousand barrels per day. Five hundred thousand barrels were lost before the well could be controlled and the oil saved. Enormous as these sources have been, however, the consumption of oil has taxed them to the limit. At the rate of increase of production in 1915 there was in sight a supply sufficient for not more than twenty years. Within that time new fields or different methods of producing oil must be discovered.¹

GROWTH OF CRUDE-PETROLEUM PRODUCTION

YEAR	BARRELS	YEAR	BARRELS
1860	500,000	1890	45,824,000
1865	2,498,000	1895	52,892,000
1870	5,261,000	1900	63,621,000
1875	8,787,000	1905	134,718,000
1880	26,286,000	1910	209,557,000
1885	21,859,000	1916	300,767,000

Water power. — According to figures given by the United States Geological Survey, the amount of power that might be secured from the natural flow of the streams of the country is at least thirty-seven million horse power, and estimates of what might be secured by storing flood waters go as high as two hundred million horse power. Of this only about six million horse power had been developed by 1911, or about one-fourth of the total amount of mechanical energy now used in the country. A large part is used to produce electricity for artificial lighting and for running electric railroads. Of water power for manufacturing, about eighty-three per cent is consumed in New England, New York, Wisconsin, and Minnesota.

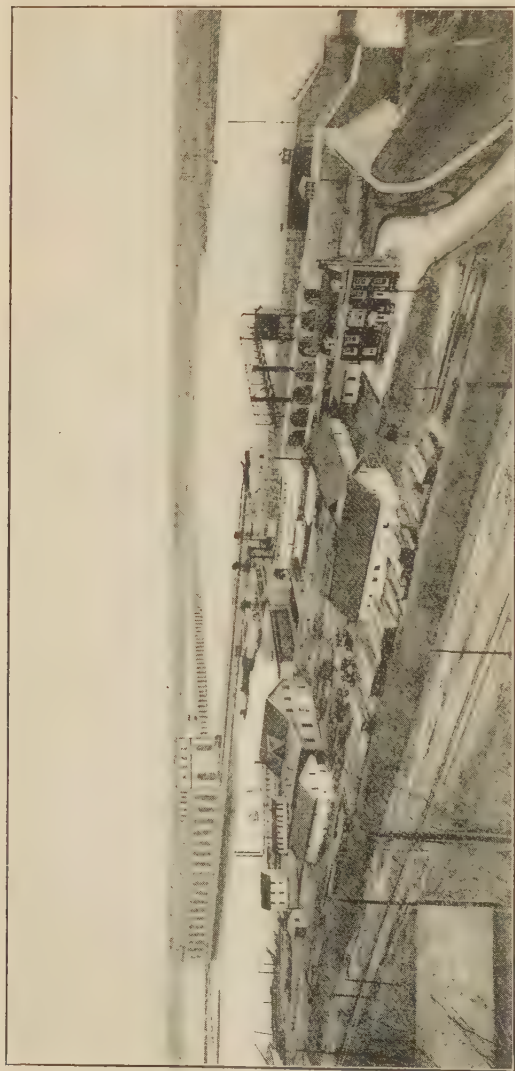
¹ In the Rocky Mountain states there are immense beds of shale from which oil may be produced by chemical action. This method of production has long been in use in Scotland. It is asserted that the Western shale contains many times the total amount of oil so far produced in this country.



The importance of the water supply lies in its great abundance and in its permanence. If all the water power of the country could be developed and applied, it would considerably more than supply all our present needs for mechanical energy. In order to conserve our coal and oil resources, which will sooner or later be exhausted, it is of the most vital importance that the states and the nation adopt a farsighted and permanent policy looking to the rapid utilization of the water power now going to waste.

Iron: *The place of iron in industry.* — Resources of iron have been next to coal in their influence on the industrial and social life of the country. It is steel that supplies the strength necessary to support modern industrialism. For example, steel rails, car wheels, and axles have made possible the growth of the freight car between 1860 and 1910 from a ten-ton to a fifty- or sixty-ton capacity. By means of it locomotive engines can be constructed strong enough to haul seventy or eighty of these cars loaded, and bridges made capable of bearing the entire weight many times over. No other agency that we know of could endure the strain of propelling a thirty-thousand-ton ship through the water for days at a time at a rate of from fifteen to thirty knots an hour. It would be difficult, indeed, to think of any article used by civilized man in the production of which steel has not in some way been concerned. The influence of steel upon modern industrial life becomes all the more apparent when one reviews the wonderful development made since 1860 and remembers that the art of producing cheap steel was perfected just before this period began.

Iron-ore resources. — It is impossible for anyone to say with any degree of certainty how great the iron-ore resources of the United States are. In the first place, the vastness of the deposits makes accurate measurements difficult. In the second place, science so rapidly uncovers new methods of treating ores that many which were once considered valueless are constantly being rendered available. In 1909 the United States Geological Survey published the results of an investigation into the iron-



Courtesy of Stone and Webster, Boston.

MISSISSIPPI RIVER POWER DEVELOPMENT AT KEOKUK, IOWA

This one plant supplies the light and traction power for a large number of cities along the Mississippi as far south as St. Louis. It saves hundreds of thousands of tons of coal every year.

ore resources of the country. In that year the report showed that there were "available" four billion seven hundred and eighty-eight million five hundred thousand tons of ore, "available" ores at that time being those which contained at least forty per cent of iron. Since then, however, one new process of treating ores has made available in the Eastern states alone two billion tons of ore averaging but thirty per cent pure. The Geological Survey estimated the amount of ore running thirty-five per cent or better to be seventy-five billion tons — none of which it classed as available. Of ores of still lower grades there is even a far greater quantity. When science and invention shall have opened up this enormous supply, as they doubtless will in good time, the future of the industry assumes such vast proportions as to be quite beyond the power of the human mind to grasp. The following tables give some indication of the progress made in twenty years in making available lower grades of ores:

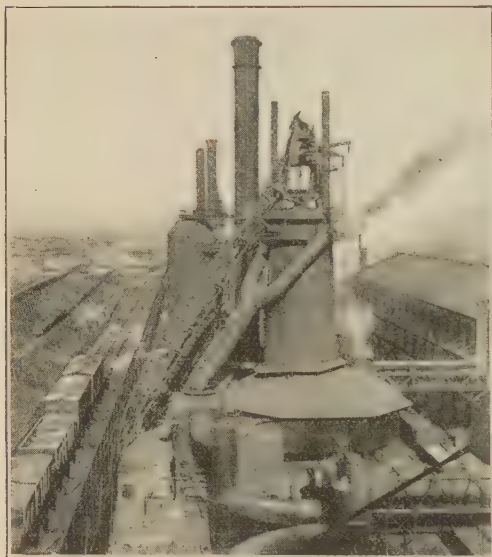
YEARS	ORE PRODUCTION (Tons)	PIG IRON RECOVERED (Tons)	RELATION BETWEEN PIG-IRON RECOVERY AND ORE MINED (Per Cent)
1890-1894	70,400,000	40,400,000	57.4
1895-1899	93,600,000	53,100,000	56.7
1900-1904	154,600,000	82,000,000	53.0
1905-1909	229,250,000	115,800,000	50.5

PER CENT PIG IRON ACTUALLY RECOVERED FROM ORE SMELTED.

YEAR	PER CENT	YEAR	PER CENT
1879	49.7	1904	52.1
1889	54.7	1909	51.0
1899	53.6		

Geography of the iron-ore deposits. — Until 1860 the iron industry of the country depended upon the supplies of ore found roughly paralleling the Eastern mountain ranges. Of this supply only the northern part, extending from northeastern New

York through the Middle states and on into Ohio and Kentucky, had been extensively worked. In 1844, however, government surveyors discovered deposits twelve miles west of Marquette, Michigan, near Lake Superior. Other discoveries were soon made in these regions, and by 1850 Pennsylvania



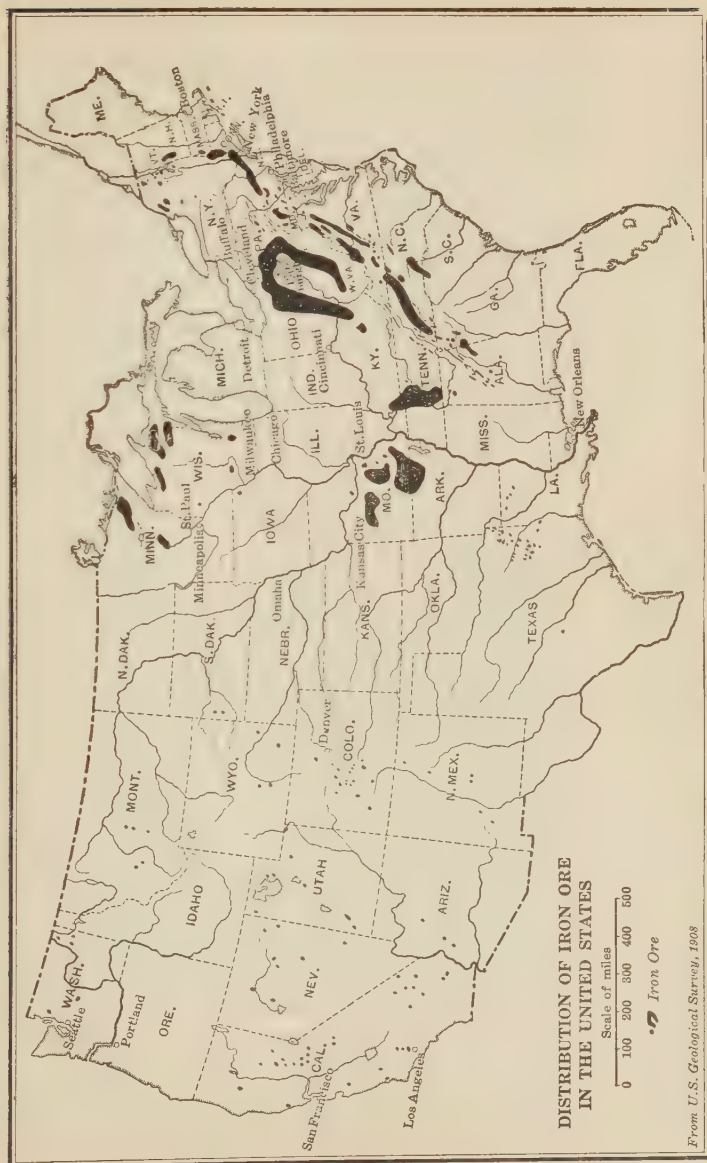
Reproduced by permission of The Philadelphia Commercial Museum.

**BLAST FURNACE, COLORADO FUEL AND IRON CO.,
PUEBLO, COLORADO**

A furnace like this will produce more pig iron in a month or two than all the colonial furnaces could produce in a year.

iron men began to take notice of them. After the war broke out there was a rapid development of these mines. During the 'eighties other deposits were found along the Gogebic and Vermilion ranges, and in 1892 the greatest of them all, the deposits of the Messabi Range, were opened. It is in these districts along Lake Superior that the bulk of the iron resources of the country, as far as we know, lies.

Here, over seventy billion tons of ore are concealed, according to the estimates of government surveyors. It is upon them that the development of the steel industry has depended since the Civil War. While other deposits, such as those in Alabama, have given rise to important local industries, the Lake Superior mines have been for years, and are likely to continue to be, the main source of supply. On future pages we shall see how



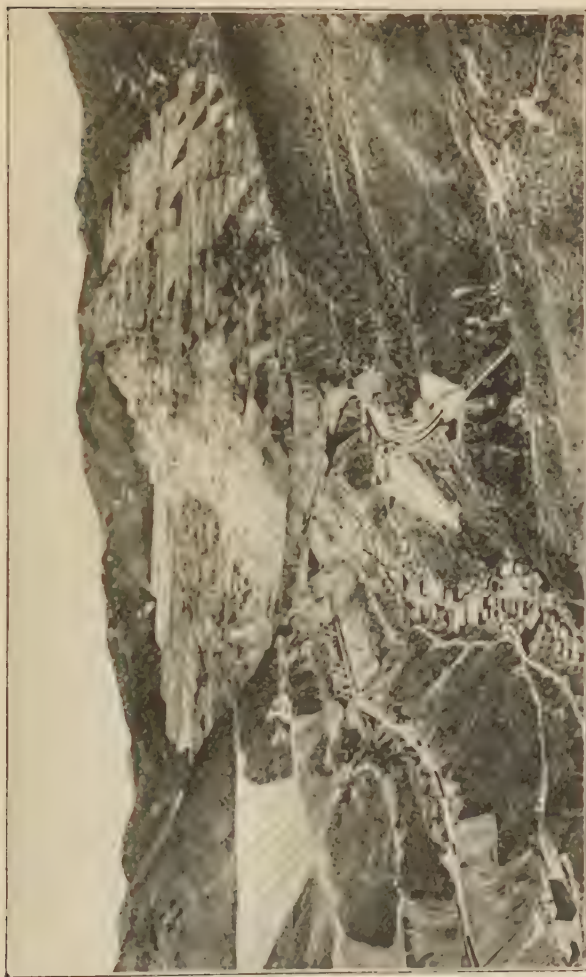
these great fields, situated as they are within easy water transportation of the important bituminous coal fields to the south, have built up a long line of iron cities reaching from Pittsburgh along the southern shores of Lakes Erie and Michigan to Chicago.

Copper: *The consumption of copper.* — Since 1890 the United States has become the greatest copper producer of the world. For twenty years before this the demand for the metal had greatly increased. This was due partly to the manufacture of electrical equipment. The demand has continued to grow, also, on account of a great fall in price which followed the opening of immense new mines and the discovery of cheaper methods of production. Most of the increased production has come from the United States. The following table shows the smelter production in the United States since 1845:

YEAR	POUNDS	YEAR	POUNDS
1845	224,000	1900	606,117,000
1860	16,128,000	1910	1,080,160,000
1870	28,224,000	1915	1,388,000,000
1880	60,480,000	1916	1,927,850,000
1890	259,763,000	1919	1,209,615,000

As the world's total production in 1916 was 3,106,995,660 pounds, it will be seen that considerably over half the total supply now comes from the United States.

Copper resources of the United States. — For a long time the Upper Peninsula of Michigan was the only great copper-producing district of the country. Production began here in 1845, although stories of great masses of almost pure copper had been current for many years. The earliest mines relied almost wholly upon the breaking down of these great lumps of ore, an operation which could be performed with little capital. The fame and prosperity of the district, however, have not depended upon these rich ores, which were soon worked out. At the end of the Civil War the Calumet and Hecla mines of low-grade conglomerate were opened. For many years these mines were the marvel of the world, and their productivity



*From "The Copper Country,"
Courtesy of the Utah Copper Company.*

A MOUNTAIN OF COPPER, BINGHAM, UTAH

This is exactly what it is called, a mountain of copper. Most of the mining is done by open shafts, and the dumps of waste material from the smelting process are piled up on the slopes. The waste material is so highly acid that it is dangerous to the soil and to the water. Very little of the waste material can be used for anything else. Several hundred million pounds of copper could be produced annually from this mine for perhaps half a century.

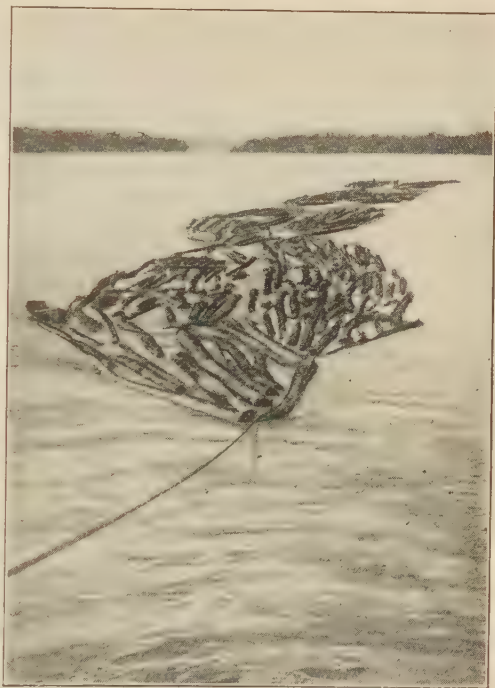
still continues, although the end now seems in sight. Meantime other great lodes have been discovered which will continue for many years to keep Michigan among the leading copper districts.

In the 'eighties certain great deposits in the Rocky Mountain regions began to make their output felt. By 1890 Montana surpassed Michigan, the bulk of its production coming from the Anaconda mines at Butte. Arizona, too, during these same years began to assume prominence in production, and by 1913 had far surpassed any other state. Since 1900 other Western states have become important producers, the leading ones being Utah, Nevada, and New Mexico. One Utah company alone at the present time produces more than the entire Michigan district. Tennessee, California, and the other Rocky Mountain states have likewise produced greater or less quantities of copper, but none has approached in importance the districts described above.

With the full development of these various new copper regions, the output since 1900 has increased at a greater rate than ever. In 1913 the United States produced about six hundred thousand tons, three times the average annual rate of the decade from 1890 to 1900. There is no way of telling how long our copper resources will last. The life of many of the developed mines can be pretty accurately foretold. Some of the greatest producers will come to their end in a generation or two. As in the case of all minerals, the production of copper depends upon discoveries, either of new deposits, or of new methods of production which will permit of the utilization of lower and lower grades of ores. Such discoveries have constantly been made. We should remember, however, that there must be an end somewhere to the new deposits. The need of conserving what resources we have, therefore, becomes daily more pressing. As we reach the place where we can see just how big many of them are and about when we may expect to see the end, the importance of thrift is borne in upon us with greater and greater force.

Forests: *The forest resources.* — The forested areas of the nation stretch in a broad belt which almost completely encircles the country. Of the total area of the land one-third was once occupied by the forests. This constituted a source of wealth so vast as never to have been accurately computed, and one that was more readily available than any other of the natural resources except the soil. It was, moreover, in large part a product of soils that were useless for other purposes. Especially is this true of a large part of the conifer-bearing lands. Finally, the forests had the additional advantage of being able to reproduce themselves if properly managed. Thus they offered a never-ending source of wealth.

Exploitation of the forests. — It is extremely unfortunate that a faulty management of such a magnificent heritage has within the space of a century been permitted to bring much of it to the verge of destruction. These results have been due first to the absorption by private interests of a large part of the most magnificent forest sections. In the second place, lumbering methods have been adopted with an eye to imme-



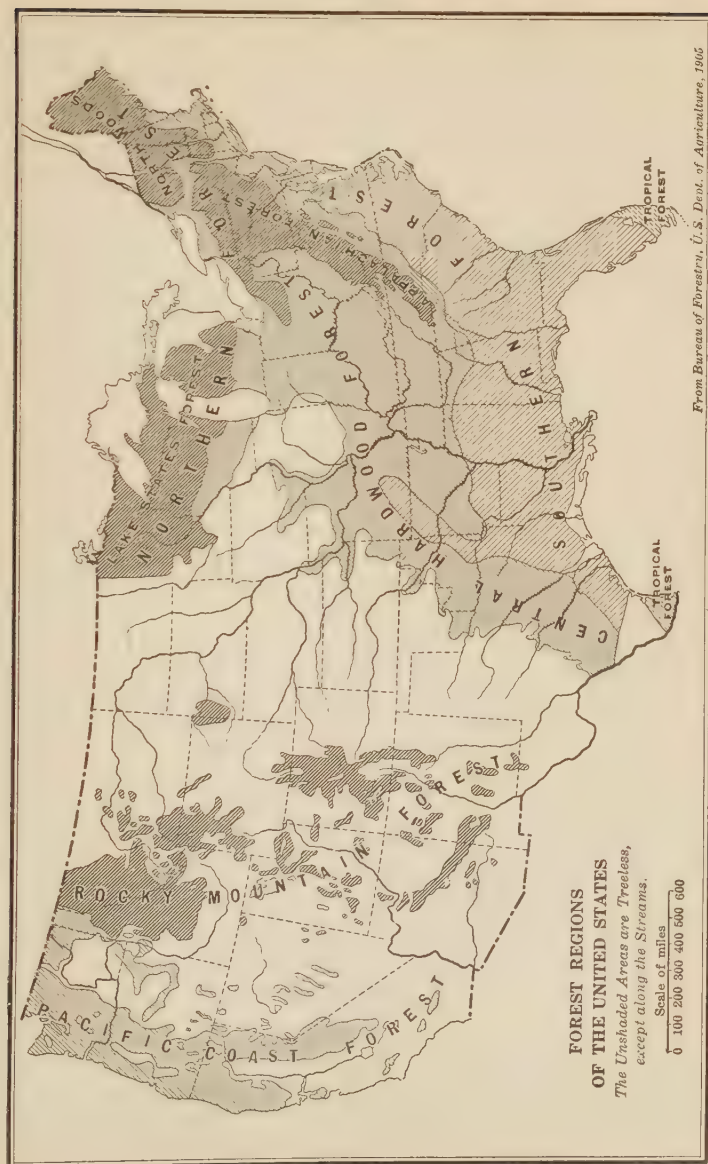
Reproduced by permission of The Philadelphia Commercial Museum.

RAFT OF LOGS, NEW IBERIA, LA.

ciate profits and seldom with a view to the permanency of the industry. Thirdly, the combination of ruthless lumbering and lax guardianship of the forests has resulted in fires which have swept away enough timber to supply the country for untold years and which have also so denuded the timber lands as to make almost impossible new growths of trees of a quality equal to the original.

Between 1870 and 1900 the states of Wisconsin, Minnesota, and Michigan supplied a large part of the lumber used in the country, and Chicago became the largest lumber market in the world. Although there were numerous varieties of timber, the staple was the white pine. This once most common of lumbers has, since the beginning of the twentieth century, almost disappeared from the market. Up to 1900 about ninety billion board feet of white pine had been taken from the forests of Wisconsin alone. In 1898 it was estimated that there were about seventeen billion feet of this timber left standing in the state. Since then this small remnant has practically disappeared, and the lumbermen have moved to the forests of the South and the Far West.

Forest conservation. — Consequently, with a view to the preservation of those forests that had not fallen into private hands, Congress in 1891 passed a law empowering the president to set aside as public reservations any public forest-bearing land. Under this act some forty-six million acres had been withdrawn up to the presidency of Theodore Roosevelt. During the administration of this aggressive champion of conservation, the forest reservations were increased to one hundred and ninety-four million five hundred thousand acres. For the protection of these reservations a Bureau of Forestry and a Forestry Service were established. Gradually, measures are being taken through the appointment of wardens and forest rangers to prevent fires. An act passed in 1911 also authorized the expenditure of two million dollars per year until 1915 for the purchase of forest areas in the Appalachian regions, and in accordance with the act one million six hundred thousand acres



From Bureau of Forestry, U.S. Dept. of Agriculture, 1905

have been set aside in the White Mountains and the Southern Appalachian districts.

It is to be remembered, however, that the guardianship of the federal government extends only to the lands still under its control. Most of the forests of the country already were in private hands before the government acted at all. Nothing, therefore, prevents the destruction of these forests but the authority of the states and the interests of the owners. These have in some instances taken measures to guard against fires and wasteful methods of cutting. There is as yet, however, no adequate protection of this large part of the timber of the country against the cupidity of private interests and the resulting ruthless destruction by axe and saw.

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QUESTIONS

1. What has been the part played by coal in the industrial development of the last hundred years? Show how the coal production has increased since 1837. Where is most of the coal used? What are the coal resources of the United States? Where are they located?

2. Describe the development in the uses of petroleum. Trace the growth of oil production since 1861, locating the different oil regions. Why is it necessary to search constantly for oil fields? Are there any oil resources in the United States not yet touched?

3. Give an account of the resources of water power, developed and undeveloped. For what purposes is water power most generally used? What peculiar importance has water power?

4. What is the importance of iron in modern society? What is the known extent of the iron resources of the United States? Why is an

accurate estimate of these resources difficult to make? Where are the principal iron-ore regions?

5. What were the reasons for the increased use of copper since 1860? Where are the principal copper-producing regions? Why is the need of conservation of minerals particularly urgent?

6. What was the extent and what is the importance of the forest resources of the United States? What are the chief defects to be found in our treatment of the forests? Had the frontier conditions anything to do with our careless forestry methods?

7. Where were the principal lumber regions between 1870 and 1900? Where are the principal regions at present?

8. Describe the measures taken after 1890 for conserving the forests. For what reasons are these measures inadequate?

9. What effect has the use of machinery had upon the natural resources?

10. Should the government restrict the exportation of raw natural resources?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the mineral resources and the water powers should not be left for private exploitation, but should be a government monopoly.

2. Resolved that the people as a whole get better returns from the natural resources monopolized by a few great concerns than would be the case if the resources were in the hands of many small independent companies.

CHAPTER XX

THE MARKET: TRANSPORTATION

- The buying power of the United States
 - The increase of population
 - Improving tastes of the people
 - The increase in national wealth
 - Specialization in industry
 - The development of means of communication
- The foreign market for manufactured goods
- Railroad development east of the Missouri
 - Short lines
 - Railroad consolidation
- Preliminaries of the Pacific roads
 - Asa Whitney
 - Sectionalism and the Pacific roads
 - Western migration
- The Union Pacific
 - The charter
 - The building of the Union Pacific
- Other transcontinentals
- The Credit Mobilier
- Further railroad development
- The development of railroad efficiency
 - The influence of steel
 - Tracks, terminal facilities, and special cars
 - Through and fast freight
 - Railroad rates
- Traffic by the Great Lakes
- Other inland waterways
 - The rivers
 - The canals
 - Causes of the decline of river and canal traffic
- Federal policy toward inland waterways
- American shipping, 1861-1895
- American shipping, 1895-1915
- The Panama Canal

The buying power of the United States. — During the whole of the nineteenth century the purchasing capacity of the people of the United States increased with great rapidity. It was not until after the Civil War, however, that the magnitude of this power began fully to be recognized. Year by year our rapidly increasing demands furnished a market eagerly sought by the manufacturers and the traders of the whole world. Easily surpassing all competitors were our own financial, commercial, and industrial leaders. For fifty years after the war, our political as well as our industrial development was largely shaped by their efforts to seize the domestic markets for homemade goods. In the following paragraphs let us examine briefly the growth of this enormous buying power.

The increase of population. — It is, of course, evident that a market depends upon the presence of people. The rapid growth of population in the United States more and more attracted the attention of the manufacturing and mercantile world as the years went by. Every twenty years from 1790 to 1850, and every thirty years from the latter date to 1910 the number of people just about doubled. It is true that in this respect the century saw a more rapid growth in European countries than had ever taken place before, but that of the United States easily outdistanced them all. During the first seventy-five years of the nineteenth century the natural increase was far greater than it has been since the closing of the frontier about 1880. At a time when land was cheap and abundant a large family was an economic asset. It constituted a cheap labor force in the midst of dear labor, and it made possible the acquisition of more land. During the frontier stage people did not expect so much for themselves or their children as they do at present; but large families were one of the means by which it was expected that the poor frontier conditions would be effaced and higher standards of living established. Having finally brought about better living conditions, the families of native Americans of three or more generations declined in size, for fear of being unable to maintain the place they had,



From Statistical Atlas of the United States, 1914

gained. For the families of six to ten or more children, so common in the early days, we must now, as a rule, look to the more recent arrivals, who have come for a job and expect to raise their low standards of living to higher ones by the labor of the whole family. Since the Civil War the natural increase of population has been largely supplemented by immigration. After 1860 our foreign-born population grew at a rate almost identical with that of the total. In 1860 it comprised slightly under, and in 1910 slightly over, fourteen per cent of the entire population. As a result of the combination of natural increase and immigration the population of thirty-one million in 1860 had grown to ninety-two million in 1910, and one hundred and five million in 1920. Other things being equal, the market afforded by the United States in the year 1920, therefore, should have been three and a half times what it was in 1860.

Improving tastes of the people. — Other things, however, have not been equal. On account of the improving tastes of the people, the consuming power of the United States had a greater increase between 1860 and 1920 than did the population. The average American has learned in the last sixty years to demand for his personal gratification more and better things than would have satisfied him in 1860. Hundreds of articles are now considered necessities which then were rare luxuries or were yet unknown. The growth of the demand for comforts, conveniences, and luxuries has far outstripped the increase of population.

A few illustrations will be sufficient for our point, although anyone can find others if he desires to do so. The comforts and conveniences in American homes have notably increased, especially within the last twenty-five years. Our houses are heated better than those of any other nation. Hot and cold water always on tap, gas and electric ranges, an enormous and rapidly increasing number of prepared foods, the telephone, and the automobile are evidences of more expensive standards. Better food and clothing, more amusements, more of the things that appeal to the intellectual and aesthetic tastes have been the fortunate lot of the average American of the last of the

nineteenth century and the first of the twentieth. The following figures will illustrate in a more concrete form the points just made:

ARTICLE	YEAR	PER CAPITA CONSUMPTION, POUNDS	PER CENT INCREASE	PER CENT INCREASE POPULA- TION
Sugar.....	1865	18.17		
Sugar.....	1914	89.14	390	
Coffee.....	1865	2.43		
Coffee.....	1914	10.06	314	
		VALUE TOTAL PRODUCTION		
Confectionery.....	1869	\$15,923,000		
Confectionery.....	1914	170,845,000	970	157
Prepared food (except canned fish and fruit).....	1869	\$3,622,000		
Prepared food (except canned fish and fruit).....	1914	219,333,000	5,950	157
Automobiles (passenger).....	1899	4,748,000		
Automobiles (passenger).....	1914	414,000,000	8,600	30
Expenditures for public schools...	1870	\$63,396,666		
Expenditures for public schools...	1915	605,460,785	855	157
Number students in college.....	1873	23,392		
Number students in college.....	1915	237,011	910	133

The increase in national wealth. — The development of improved tastes followed naturally upon an enormous increase in the total wealth of the country. The mere fact of the settlement on the land of a constantly increasing number of people added very greatly to the values of all the adjacent natural resources. As these resources were developed and made available, as raw lands were turned into improved farms, as the forests were invaded, the mines opened, and the cities, the railroads, and other transportation facilities constructed, the values of all the resources were still more increased. Thus the purchasing power kept pace with and nourished the growing

inclination to buy. The following table shows how the capacity of the nation to absorb goods increased during about sixty years:

YEAR	TOTAL WEALTH	PER CENT INCREASE	PER CAPITA
1850	\$7,136,000,000		\$307
1880	43,642,000,000	512	870
1900	88,517,000,000	103	1,164
1912	187,739,000,000	112	1,965

Specialization in industry. — In connection with the growth of the domestic market it is necessary to call attention to the effects of specialized industry upon the market. One of the results is that a family, which, in earlier days, produced nearly every article essential to its life, now produces few such articles. In fact, a very large percentage of the people do not use directly the things which they produce. Instead of that people go into the market selling their own specialty and with the returns buying a multitude of needed articles produced by other specialists in all parts of the world. In this way the markets of all nations, including the American, have been increased to an extent infinitely more vast than they would have been were it possible to produce the same amount of goods under the early self-sufficient conditions. Men buy more not only because they have more to buy with and because there is more to buy, but also because each one produces a smaller variety of goods himself.

Development of means of communication. — The establishment of the world's tremendous market and even the present-day development of railroads and of specialized industry would have been impossible had they not been accompanied, or preceded, by a corresponding growth in the means of communication. The efficiency and the number of telegraph lines advanced with rapidity after the Civil War. The duplex system was invented in 1872, multiplying the efficiency of every instru-

ment two to four times. The first successful Atlantic cable was laid in 1866. In 1876 Bell perfected the telephone, and almost at once this invention established itself as a necessity in American life. We became and have continued to be by far the greatest users of the telephone in the world. By 1910 the American Telephone and Telegraph Company was making nearly twenty million connections daily, and in 1907 the Western Union and Postal Telegraph companies sent over ninety-eight million messages. Since 1902 great progress has been made in wireless telegraphy, so that messages may now be easily sent halfway round the world.

At this point also should be mentioned the growth of the postal service, the increase in the number of daily newspapers and of special trade and industrial journals, and the consular service and reports, all of which helped in the speeding up and organization of trade and commerce. For example, during the Civil War the Post Office introduced free mail-delivery service, postal money orders, and special mail cars. In 1874 the Universal Postal Union was inaugurated, which provided for the delivery of mail to foreign countries, and toward the close of the century the rural free delivery service was established. Aided by such agencies as these, the American people proceeded to turn into a living, actual being the tremendous potential market which lay before them.

The foreign market. -- During the first hundred years of national life foreign countries took but sparingly of our manufactures. Our export trade, it is true, grew rapidly during the whole of the nineteenth century, but until after 1890 it consisted mainly of foodstuffs and crude materials for manufactures, the principal one being raw cotton. Since about 1890, however, there has been a marked change in the character of our exports. Manufactured articles ready for consumption have since that date formed a rapidly growing percentage of the whole. As our manufacturing organizations increased in size and power, the surplus above what the home market would consume grew constantly larger. Consequently, an important part

of our total manufactures now goes to foreign markets, which thus afford an increasing stimulus to our industrial life.

YEAR	PER CENT OF EXPORTS WHICH WERE COMPLETED MANUFACTURES	YEAR	PER CENT OF EXPORTS WHICH WERE COMPLETED MANUFACTURES
1850	13	1900	24
1870	15	1910	29
1890	16	1914	31

VALUE PER CAPITA OF EXPORTS OF COMPLETED MANUFACTURES

YEAR	VALUE	YEAR	VALUE
1860	\$1.14	1900	\$4.35
1870	1.46	1910	5.34
1880	1.85	1914	7.35
1890	2.11	1920	30.31

Railroad development east of the Missouri: *Short lines.* — In former chapters (pp. 173, 271) we described the growth of railroad building before 1860. During that period we saw that the main lines of New England and the Middle states, as well as most of those running east and west as far as the Mississippi, had been laid out. We will remember that these roads were not originally built as single systems, but that they consisted of many short lines laid end to end and built by separate companies. Among the inconveniences due to such a system were the following: (1) the necessity of transferring through freight at the end of each line, because the different companies would not receive cars from one another and because in many cases they could not do so on account of differences in gauge; (2) inability to bill freight through to its destination if it had to go over more than one line; and (3) the lack of fast-freight accommodations.

Railroad consolidation. — The increasing pressure of traffic east and west in the latter half of this early period led during the 'fifties to the first unions of short lines into single systems.

A number of lines running from Albany to Buffalo were brought into a single combination and formed into the New York Central. At the same time the numerous lines between Philadelphia and Pittsburgh became the Pennsylvania Railroad. Meanwhile two other roads, the Erie and the Baltimore and Ohio, connected the Eastern seaboard with the Ohio River and the Great Lakes. Up to 1860 these four lines, no one of which was over six hundred miles in length, were the great east and west through lines of the country.

Other circumstances soon began to make more evident the need of further consolidation. This became plain when the government tried to rush men, munitions, and supplies during the war. As the people spread farther west, the great distances to be covered in going from the frontier to the East made better facilities necessary. During the 'sixties the sleeping car was invented, and this vehicle was essentially for through travel.

As a result, most of the short lines west of the Alleghenies were brought together between 1860 and 1870. Out of five lines connecting Buffalo and Chicago the Lake Shore and Michigan Southern was formed in 1869. Over this line and the New York Central trains then began to run through between New York and Chicago. During the same year the Pennsylvania extended its line to Chicago.

While these consolidations were going on, new lines farther west were being constructed. During the decade of the 'sixties connections were made between Chicago and Omaha. These roads were the Burlington, the Rock Island, and the Northwestern. The era of railroad building by piecemeal was thus ended. Henceforth, short lines were built, as a rule, only as branches from the main system designed to pick up the traffic from the surrounding country.

Preliminaries of the Pacific roads: *Asa Whitney.* — For twenty years before 1850 men had dreamed of a through route to the Pacific coast. It was not until 1850, however, that really serious consideration was given the question. By that time railroads had proved their value, and the men of vision

began the attempt to make their dreams come true. Perhaps the one most responsible for keeping alive the idea of a line to the Pacific during the decade from 1840 to 1850 was Asa Whitney, a New York merchant. These years he spent in talking, writing, and planning for a transcontinental road. His hopes he placed upon government aid, and year after year his proposals were before Congress. "I have undertaken this mighty work," he said, "because I know someone's whole life must be sacrificed to it."¹ For various reasons all his schemes failed, and it is said that he spent the last years of his life running a small dairy farm near Washington.

Sectionalism and the Pacific roads. — Although Whitney's schemes were, perhaps, impracticable, the real reasons for the failure of all such plans up to 1860 were slavery and the national division which it caused. Whenever Congress took up the consideration of a Pacific railroad, the thought uppermost in every man's mind was how it would affect the extension of slavery, and from this grew a determination on the part of Southerners that such a road, if built at all, must be built in Southern territory; while on the part of the Northerners there was equally strong insistence that the route must be a Northern one. The matter was put thus by a Georgia Senator: "'No Union or no slavery' will sooner or later be forced upon the choice of the Southern people. It is because I believe that separation is not far distant . . . that I am unwilling to vote as much land and as much money as this bill proposes to build a road to the Pacific, which, in my judgment, will be created outside of a Southern Confederacy, and will belong exclusively to the North."² Against this immovable wall which had been built between the two sections all Pacific railroad schemes were shattered. Compromises, such as that proposed by Douglas, providing for a Northern, a Southern, and a Middle route, proved of no avail.

Western migration. — Meantime, the demands for better connections accumulated rapidly. The discovery of gold in Cali-

¹ Davis, J. P., *The Union Pacific Railway*, p. 20.

² *Ibid.*, p. 85.

ifornia in 1848 brought thousands thither within the next few years. So great was the inrush that California was ready for statehood in 1850. At the end of the decade discoveries of the precious metals were likewise made in Colorado. Mormons had settled in large numbers in Utah. Gradually the agricultural possibilities of the Western country were being demonstrated. From all the sections where people had gone there was a constantly growing demand for better communications with the East. From the East, which furnished these regions with many of their needed supplies and apparatus, the demand was equally strong. Finally, on the part of the government there was felt a growing need of connecting these far-distant communities with the center of authority. The Civil War, threatening a division between North and South, taught the need of precaution lest East and West, separated geographically by deserts and mountains, become separated politically as well.

The Union Pacific: *The Charter.* — The Civil War removed temporarily one of the contending factions from Congress. In 1862, therefore, an act, amended in 1864, created the Union Pacific Railroad Company. This company was authorized to construct a road west from the Missouri River in the territory of Nebraska to connect with a line being built eastward by the Central Pacific, a California corporation. Both companies were to receive aid from the government in the form of land and credit. The land gift was to consist of ten sections on each side of the road for every mile. The credit consisted of the loan to the roads of government bonds to the extent of from sixteen thousand to forty-eight thousand dollars, depending upon the locality, per mile of road constructed.

The building of the Union Pacific. — The peopling of the North American continent has been filled with thousands of events that warm the blood and thrill the soul. Perhaps no other episode, however, had greater dramatic interest than the opening of the deserts and Western mountain ranges by railroads and the closing of the gap between East and West. While much interest attaches to the building of all the transconti-

mentals, it adheres with special emphasis to that of the Union Pacific because it was the first. When the others were being built, the idea had become more commonplace, but the builders of the Union Pacific had the whole world as eager spectators.

These men faced all the difficulties of an uninhabited land. Between Ogden, Utah, and the eastern terminus there were no



Courtesy of the Union Pacific Railroad Company

THE BUILDING OF THE UNION PACIFIC

The last stand of the Red man.

people at all except Indians. Within this territory there was no food, no wood, little water, and no iron. All supplies and construction materials had to be brought overland. United States soldiers were on constant guard against the Indians. On the eastern line the work was done by Irish immigrants; on the western by Chinese coolies. Supply towns would spring up near the ends of the lines where the gangs were working,

would last for a few weeks, and then move farther into the desert. A contemporary writes thus of one of these towns:

"In the worst part of this desert, just west of the last crossing of the Platte, we found Benton, the great terminus town, six hundred and ninety-eight miles from Omaha. . . . Not a green tree, shrub, or spear of grass was to be seen; the red hills, scorched and bare as if blasted by the lightnings of an angry God, bounded the white basin on the north and east, while to



Courtesy of the Union Pacific Railroad Company

THE BUILDING OF THE UNION PACIFIC

"The red hills, scorched and bare."

the south and west spread the great desert. . . . Yet here had sprung up in two weeks . . . a city of three thousand people. There were a city government of mayor and aldermen, a daily paper, and a volume of ordinances for the public health. It was the end of the freight and passenger, and beginning of the construction division; twice every day immense trains arrived and departed. . . . The streets were thronged with motley crowds of railroad men, Mexicans and Indians, gamblers, 'cappers,' and saloon keepers, merchants, miners,

and mule whackers. The streets were eight inches deep in white dust, and a new arrival with black clothes looked like nothing so much as a cockroach struggling through a flour barrel. Everything that looked solid was sham. Red brick fronts, brown stone fronts, and stucco walls were found to have been made to order in Chicago and shipped in (pine) sections. Two boys with screw drivers put up a habitable dwelling in three hours. . . . Ten months afterward I revisited the site. There was not a house or tent to be seen; a few rock piles and half destroyed chimneys barely sufficed to mark the ruins; the white dust had covered everything else, and desolation reigned supreme." ¹

The race between the two companies was keen, since the amount of government subsidies depended in part upon the mileage constructed. Toward the end each had over ten thousand men at work, and from four to ten miles per day were laid through the mountains. On May 10, 1869, amidst elaborate ceremonies, the last spike was driven. Telegraph lines all over the country were kept open to flash the news when the work was done. In truth the event was worthy of the enthusiasm aroused. It was the opening of the final act in the great drama of peopling and welding together a continent three thousand miles in extent.

Other transcontinentals. — Meanwhile other routes to the Western coast were being projected. In 1864 the Northern Pacific was chartered, and was completed to Portland, Oregon, by 1883. Other roads connected St. Louis and New Orleans with the Pacific. By the end of the century five new lines had been finished. At the present time one has his choice of eight or ten routes in traveling from coast to coast.

Credit Mobilier. — Political and financial scandals marred the linking of the East and the West by railroads. Many of the men most intimately concerned seized upon the building of the Union Pacific as an opportunity for quick and easy profits. For the construction a separate company, called the Credit

¹ Beadle, J. H., *Western Wilds*, p. 87.



Courtesy of the Union Pacific Railroad Company

EAST MEETS WEST

Amidst such a cheering crowd the great engine, before it departed, the last spike was driven in the rails connecting the Atlantic with the Pacific. This drive and the famous westward drive in 1869, the work of colonization was reaching its completion.

Mobilier, was chartered. The members of this new company were also the directors of the Union Pacific Railroad Company, and as such they let contracts for construction to the Credit Mobilier, that is, to themselves. It is needless to say that these contracts were very favorable to the construction company and very expensive for the railroad. To make matters worse, shares in the Credit Mobilier were distributed among certain members of Congress in order, as it was stated, to keep these men quiet. Consequently, the building of the road cost much more than it should have done, and helped to place it under a heavy burden for years afterward. There can be no extenuation of such a disgraceful episode, although since then a large part of our railroad system has struggled under handicaps laid upon it by similar vicious methods of promotion and construction. The case of the Union Pacific was more widely advertised, and thus gained greater notoriety, but it was no worse than that of many another.

Further railroad development. — We have now traced to its completion the framework of our railroad system. Only a few words need be said of the filling of the framework. Even before the war this had been practically accomplished in the Northeastern section of the country. Since then the work has gone on steadily. North and south lines run up and down both coasts and at frequent intervals inland. Feeders and branches of the main lines have been built everywhere, until the railroad map of the country is a veritable network of lines crossing and re-crossing one another. Every inhabited portion of the land has been searched out, so that in but few places are there people living who are not within easy reach of a railroad. The following table shows the growth of railroad mileage since the middle of the century:

YEAR	MILEAGE	YEAR	MILEAGE
1850	9,021	1890	163,597
1860	30,626	1900	193,345
1870	52,922	1910	240,438
1880	93,349	1915	253,788

Development of railroad efficiency. — The railroad mileage of 1910 was about eight times what it was in 1860. This growth, however, by no means gives an adequate notion of the increase of the carrying power of the system. The number of passengers and the tons of freight carried a mile are now far greater in proportion to the size of the system than they were in 1860. This is due to other developments which we shall now attempt to describe.

Influence of steel. — Cheap steel is largely responsible for the great development of railroad carrying capacity during the last fifty years. On future pages (pp. 369-370) we shall describe the invention of the Bessemer and the open-hearth processes of steel making. During the last thirty years of the nineteenth century these processes brought the price of steel from a hundred and sixty dollars per ton steadily downward. In 1903 the price of steel rails in the United States was fixed at twenty-eight dollars per ton and remained at that figure unaltered until after the Great War had been in progress for some time.

The result, as far as railroads were concerned, was that wherever iron had previously been used steel was rapidly substituted. By the end of the century there were practically no iron rails on any of the roads in the country. The same is true of locomotives and cars. This universal substitution of steel for iron permitted an enormous increase in size of engines, cars, and trains, as well as in the speed at which they might go with safety. During fifty years the capacity of freight cars grew from ten to fifty tons and over. The weight and power of the engines more than trebled. The rails developed from small, untrustworthy iron ones of forty to fifty pounds per yard, into tough steel ones weighing from eighty to one hundred and ten pounds per yard. These rails have enabled the trains, in spite of their greatly increased weight, to run at far greater speeds than formerly. Even after the substitution of steel for iron had become complete, the capacity of the railroad trains continued to increase. In 1908 each car and every train was

carrying about twenty-five per cent more than it had carried seven years before.

Tracks, terminal facilities, and special cars. — Accompanying the growth in railroad mileage there has taken place a constant increase in trackage. Two-, four-, and six-track roads have in many of the more congested regions displaced all the single-track lines. As a result, much of the waiting on sidings for other trains to pass has been done away with. With the doubling of the track went more than a doubling of the hauling capacity of the road. Since the end of the century there has been an enormous development in terminals. Great sums have been and will yet be expended in increasing the size of freight yards and in linking them up with connecting systems so as to avoid freight congestion and the consequent delays. Special facilities have also been developed for loading and unloading. This is particularly true of certain bulky freight, such as grain, ore, and coal, which comprises a large part of the freight of the United States. In order to speed up shipment of certain commodities, cars specially designed for their carriage have been developed. Among such may be mentioned coal, ore, and oil-tank cars, and special cars for stock and for refrigeration.

Through and fast freight. — The fifty years following the Civil War also saw great changes along the lines of coöperation among different railroads. This has likewise resulted in a quicker handling of freight. Through shipments on the early roads were unprovided for, if the destination lay beyond the end of a line, and, moreover, the roads refused to take cars from their rivals. These conditions led to the formation during the 'fifties of independent through-freight companies which had their own cars. These cars, by agreements with the railroads, were accepted on all lines. They were fitted with especially broad wheels, so that they might run on any gauge.

When railroad consolidation began, however, there was less and less need of separate through-freight companies. By 1880, moreover, standard gauges had been agreed upon by all the railroads, and soon afterwards the acceptance of cars by one from

another was made obligatory by federal law. By this time, therefore, the fast and through freight business had been taken over by the railroads themselves. Thenceforward, freight might be billed through from one part of the country to any other part. In the same way one can buy a through ticket to any place that the railroads reach. Numerous traffic associations were formed among the different railroad lines after 1870, and these apportion the receipts to each line over which the freight goes. Steps were also taken to prevent "borrowing" and unnecessary detention of cars — practices that were very common at one time.

Railroad rates. — Beginning about 1870 freight rates, and passenger as well, began to fall. For over ten years the decline was generally due to severe competition among parallel roads, and among rival seaboard cities. After these years of struggle were ended, and harmony was established among the roads, the rates still continued to decline. The continuation of the decline was owing to the improvements which we have described on the preceding pages. In 1867 it was costing an average of one and ninety-two hundredths cents to ship a ton of freight one mile. By 1880 the cost was one and two-tenths cents, and by 1900 about three-quarters of a cent. Such a decline resulted in a great increase in railroad traffic, an increase which, as we shall see, was taken from the waterways.

The Great Lakes. — To the Northern regions stretching from the Dakotas to the Atlantic, the Great Lakes have been of enormous service. From the western end of Lake Superior to Buffalo — a distance of six hundred miles — it is possible to ship by water. The Erie Canal, furthermore, extends this route to the Atlantic. For bulky goods, such as wheat, flour, coal, and ore, water transportation is cheaper than any other kind, and it is this sort of commodity that is most accessible to the lakes. The shores of Lake Superior are surrounded by copper and iron deposits of the richest and most extensive kind, and the states of Wisconsin, Minnesota, and the Dakotas are the home of great wheat fields. To facilitate shipping, about

the middle of the century the St. Mary's Canal, connecting Lakes Superior and Huron, was constructed by the government, and several times since has been enlarged to keep up with the size of the ships.

The traffic upon the lakes grew rapidly. In 1851 the tonnage of steam vessels on these waters was seventy-four thousand; by 1897 it had grown to over nine hundred and seventy-seven thousand. There is also a large tonnage of other vessels, although since 1860 these have tended to decline. The efficiency of the fleet has also largely increased. In 1880 the completion of fifteen to sixteen round trips yearly from the western end of Lake Superior to the foot of Lake Erie was considered satisfactory work. By the end of the century, however, the iron men demanded at least twenty-two. These results were accomplished largely by mechanical devices for loading and unloading, such as the grain elevators, the clam-shell ore bucket, the specially built ore cars, the docks, and the pockets. These devices have nearly displaced labor in the loading and unloading of vessels. Consequently, the stay in port, once a matter of days, may now be but a few hours, so that the ships may all the time be on their true business of transporting freight.

Other inland waterways: *The rivers.* — While the railroads and the lakes were thus prospering, the rivers were falling into decay. In chapter seventeen we told of the Mississippi River as a great artery of commerce before the Civil War. The war, of course, put a temporary end to the traffic. Since then the river has never reached the importance that it deserves as the main waterway of the continent. Moreover, although there are many large tributaries to the Mississippi, they have, with the exception of the Ohio, been utilized just as little. That the Ohio is used is due in large measure to the coal along its upper reaches. Pittsburgh and its vicinity have used the river for the shipment of coal to the households and the factories of a large part of the Mississippi Basin.

The canals. — In like manner the canals, over which we saw so much enthusiasm during the period from 1825 to 1835, have

gradually failed to hold their own. Many have been abandoned altogether. By the end of the nineteenth century over half of the forty-five hundred miles of canals that had been constructed were not in use. The Erie still does important service, although relatively far less than formerly. Since 1903, however, New York State has been greatly enlarging this waterway so as to permit of the use upon it of barges of a thousand tons burden. This canal, therefore, seems destined to have a greater future.

Causes of the decline of river and canal traffic. — One of the most important causes of the decline in river and canal traffic is the railroad. Most of the commerce of the country tends to go east and west, while the river systems run north and south. Railroads were built along the natural trade direction. Furthermore, the railroads proved themselves more efficient for transporting through freight, which makes up the greater part of American trade. The river and canal systems were unable to take care of such traffic except by transshipping, which is inconvenient, slow, and costly. In former paragraphs we have seen that through freight was precisely the kind of traffic that the railroads had fitted themselves to handle. The necessity of transshipping often made even the Great Lakes unable to compete with the railroads. Except in the cases where these breaks were rendered very short and inexpensive by mechanical devices, such as the grain elevator, the railroads were often able to take away business from these cheapest of all waterways. For example, the lakes held their own in the carrying of wheat, but in the case of flour they were well whipped by the railroads.

Another reason for the decline of inland water routes is the lack of a farsighted and systematic plan of development. In the early years canals were built by the several states with little reference to their relation to one another. Local needs and local pride were consulted, but there was little coöperation to the end of making every part of the water system fit into a completed whole.

Federal policy toward inland waterways. — The federal government has spent large sums of money upon the rivers and

harbors of the country. Year by year for nearly a century Congress has voted money for this purpose, and the appropriations have steadily grown larger. By 1907 over five hundred million dollars had been spent in this way. Yet, because of the lack of a plan, there is no expenditure of Congress that has met with greater ridicule and condemnation. The Rivers and Harbors Bill is commonly referred to as the "pork barrel," where every Congressman who wishes to please his constituents by the expenditure of federal money in their district goes for his slice of pork. As a result, millions of dollars have been spent on streams too small for navigation, in out-of-the-way places, and also on worthy undertakings which were left half finished. The matter was thus put by President Roosevelt: "Our magnificent river system, with its superb possibilities for public usefulness, was dealt with by the national government not as a unit, but as a disconnected series of pork-barrel problems, whose only real interest was in their effect on the reelection or defeat of a Congressman here and there."

In 1907, while Roosevelt was President, he appointed a commission, known as the Inland Waterways Commission, to study the whole problem. This commission reported in 1908. Since that time the question of a comprehensive system for the development of inland waterways has been further studied by other agencies, but no real plan has yet been put into operation.

American shipping, 1861-1895. — We have already noticed (p. 282) the introduction of the iron ship in ocean traffic. This new factor, we saw, was beginning to work to the disadvantage of American shipping and carrying trade, because England could build iron ships more cheaply than we and because we stuck to the wooden ship, which was soon to become out of date. The Civil War, moreover, put an end for a time to our foreign carrying trade, and the English shipowners took advantage of our difficulties to establish themselves in trade which was once controlled by Americans. The trade thus lost was not regained after the war, and gradually American ships disappeared from the foreign ports of the world.

The important reason, however, why Americans neglected the building of ships after the war was not that which caused its decline in the first place. The great prizes to be won in internal development now turned men's thoughts away from the sea and from foreign trade. The enthusiasm and the capital of the nation went into the exploitation of its own natural resources.

The result was that the merchant marine steadily declined. Except for the coasting and Great Lakes shipping, it would have all but disappeared. In 1861 the tonnage engaged in foreign trade reached its maximum — nearly two million five hundred thousand tons. By the end of the century it had fallen to less than one-third that amount, and until the outbreak of the Great War there was but little increase. The whole merchant marine — Great Lakes, Atlantic and Pacific coasting fleets, and the ships engaged in the foreign trade combined — amounted to 7,928,688 tons in 1914. Of this 6,845,000 tons belonged to the coastwise and Great Lakes fleets.

American shipping, 1895 to 1915. — The years from 1895 to 1915 were marked rather by a changing attitude on the part of the country toward the question of the merchant marine than by an actual revival in shipbuilding activity. During this period foreign trade had grown rapidly (p. 333). It came to be recognized more and more that this trade could be pushed better, if, instead of being left to the mercies of foreign shipping, it were supported by an American fleet. There was, therefore, considerable pressure brought to bear to secure a subsidy from Congress for the encouragement of the merchant marine in ways similar to those in vogue in England, Germany, and France. When the Great War started, shipping rates rose to such a degree that the national government in 1916 created a Shipping Board, consisting of the Secretary of the Navy and others conversant with the business of ship construction. This board was empowered to buy, lease, or build ships and to create a corporation which should operate them. When the United States entered the war, this board and the corporation created under it undertook a vast shipbuilding program. Shipyards

everywhere were enlarged to meet the new demands, and one on a mammoth scale was constructed at Hog Island, near Philadelphia, under the direction of the Shipbuilding Corporation. It is yet too early to tell what permanent policy will grow out of the activities brought about by the necessities of war-time emergencies. It is safe to say, however, that the whole country has at last been awakened to the value of owning its own ships.

The Panama Canal. — For a long time men had been thinking of cutting their way from the Atlantic to the Pacific through Nicaragua or Panama. Such a project became especially urgent after the discovery of gold in California started trade between this section and the East. In 1855 a railroad was built across Panama, and by this route much of the trade between the coasts was afterward carried on.

In the 'eighties a French company undertook the building of a canal, but met with failure. By the end of the century, however, the interests of the United States in the Pacific had vastly increased. In 1898, after several years' pressure had been applied to the government by American interests in the Hawaiian Islands, the latter were annexed and given a territorial form of government. In the same year came the war with Spain over the question of Cuban independence. When, after a few months' struggle, the war ended, the United States found itself with a colonial empire on its hands. Porto Rico in the Atlantic Ocean, and the Philippines in the Pacific were added to our dominions. These acquisitions, together with the growing importance of Oriental trade, influenced the government to take up the matter of a canal across the Isthmus. The Hay-Pauncefote treaty with England disposed of her claims, and paved the way for independent action by the United States. The rights of the French company were bought, and in 1904 the work was begun. Ten years later the first ship went through the canal.

It is impossible to overestimate the effect that this work will have on the trade of the United States. It opens a direct, al-

most straight, route to the west coast of South America, and shortens the distance by many thousands of miles. The distance from New York to San Francisco via this route is not much over a third of what it is around South America. It was expected that land traffic to the Pacific would be hurt, while the trade of Gulf cities with South America, the West coast, and the East would grow. These expectations have become facts. A large trade via the canal began at once and has increased very rapidly since the close of the Great War. Over eleven million five hundred thousand tons of freight were carried through the canal during the fiscal year 1920-1921, and within the next three years the tonnage more than doubled. Already talk is heard that another canal will be needed to meet further demands. Much traffic to the Pacific coast once carried by the railroads now goes by the water route. Northwestern railroads, such as the St. Paul now in receivership, complain bitterly that their difficulties are largely owing to this diversion of traffic.

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QUESTIONS

1. What reasons were there for the great increase in population during the nineteenth century? In what ways did frontier conditions lead to large families? Why do families decrease in size as people rise to better living conditions? How does the number of foreign born compare with that of native born?

2. What is meant by improving tastes? Does the fact that Americans spend more than other people indicate that they have reached a higher civilization than others? Since the work of the household has been so greatly simplified, has the work done by women become proportionately lessened? Could the world support everybody on a standard of living equal to that of the ordinarily prosperous American family?

3. Why does the price of land increase as the population increases? Does increased price mean an increase in actual wealth?

4. What is meant by specialized industry? How does the specialization of industry lead to increased buying and selling?

5. What has been the character of our foreign exports during most of our history? Why have our exports of manufactures increased since the Civil War?

6. What were the characteristics of our railroads before the Civil War? What inconveniences were experienced in the use of the lines?

7. Describe the early railroad consolidations. What lessons did the Civil War teach? What other influences made consolidation necessary? Describe the railroad building east of the Missouri River immediately following the war.

8. Describe the work of Asa Whitney. What influences delayed the building of transcontinentals? What events were making more necessary railroad connection between the Atlantic and the Pacific? What influence had the Civil War in hastening the building of the first Pacific railroad? What aid was given the road by the government? Was government aid to railroads wise? What were the difficulties in the way of constructing the Pacific roads? Describe a supply town. What other transcontinentals were completed by the end of the century? What was the Credit Mobilier?

9. What other developments in railroad building were taking place while the transcontinentals were being laid?

10. Describe the advances in the methods of making steel after the Civil War. What effects did this have on railroad efficiency? What other developments took place increasing the efficiency of the roads? What were the difficulties of shipping through freight during the early years of the railroads? What results did railroad consolidation have on through-freight shipments? What conditions in the United States caused the railroads to lay special emphasis on through-freight efficiency?

11. What is the importance of the Great Lakes for through-freight transportation? In what respects are they well situated for carrying bulky freight? How have the Erie and St. Mary's canals added to the value of the Great Lakes as waterways? Describe the development of traffic on the lakes.

12. Give the history of transportation by rivers and canals since the Civil War. Why have the railroads been able to take traffic from the rivers and canals? In what way has the federal government treated the problem of inland waterways?

13. What effects did the Civil War have on American foreign commerce and shipping? Why was there not a revival of shipping activity after the war? In what trade were most of our ships used? Why did we begin to think more seriously of the shipping problem after about 1890? What was the influence of the Great War on American shipping?

14. Give a history of the efforts to build a canal between the Atlantic and the Pacific. What are some of the results hoped for from the building of the Panama Canal?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that a less rapid accumulation of wealth would have resulted in a better type of American.

2. Resolved that it is more desirable for the government to spend money on a systematic development of waterways than to stimulate ocean shipping by any form of subsidy.

3. Resolved that the purpose in view justified the methods pursued by the United States in acquiring the Panama Canal zone.

CHAPTER XXI

DEVELOPMENT OF MANUFACTURING, 1865-1915

The spread of manufacturing interests

 The Middle West

 The old Northwest Territory

 Rocky Mountain and Pacific Coast regions

 The South

Manufactures of the Middle West

 Iron and steel

 Influence of agriculture on manufactures

Manufactures of the Far West

 The leading industries

 Power resources

Manufactures of the South

 Influence of cotton on Southern manufactures

 By-products of the cotton plant

 Iron and steel

 Lumbering

The manufactures of the Northeast

 The raw materials

 The market

 Early start in manufacturing

 The accumulation of capital

 The labor supply

 The natural resources

The quality of American manufactures

The iron and steel industry

 The Bessemer process

 The open-hearth process

 The production of pig iron

 Rolling, forging, and pressing

Boots and shoes

Cotton manufactures

 Technical improvements as influenced by the market

 Technical improvements as influenced by the labor supply

 Technical improvements in weaving

 Technical improvements in knitting

Woolen manufactures

The Civil War and the tariff

The three fields of the woolen manufacture

Specialization in the worsted industry

Machinery

Carpets and rugs

Silk manufacture

Technical improvements

Growth of the silk industry

The manufacture of clothing

The manufacture of food

The packing industry

Flour and other cereal preparations

Prepared foods

The spread of manufacturing interests. — In the course of half a century the United States has changed from a pioneering and agricultural nation into one in which the predominant interests are those of manufacturing and trade. As the people moved west they were followed by the manufactory. The movement westward of the center of manufactures since 1820 has been almost exactly at the same rate of speed as that of the center of population. Starting from near Harrisburg, Pennsylvania, in 1850, it had by 1880 reached a point just north of Pittsburgh, and by 1900 was about thirty-five miles west of Canton, Ohio.

The Middle West. — During the years from 1870 to 1900 the states of the old Northwest Territory made enormous strides in manufacturing. A little later similar developments began to take place in Missouri, Iowa, and Minnesota. In these two vast regions the value of manufactured products trebled between 1860 and 1870, nearly trebled again from 1870 to 1890, and increased by over one billion dollars from 1890 to 1900. The new century brought no pause to this amazing growth, and by 1914 the value of manufactured products from these sections was double that of 1900, having reached a total of nearly eight billion dollars. This was two and a half times that of New England, and almost equal to that of the five Middle Atlantic states.

The old Northwest Territory. — Taking the states of the old Northwest Territory alone, the figures become even more striking. Of these states only two failed to double the value of their manufactures between 1899 and 1914. Some of them did far more than this, the two most notable advances being made by Michigan and Ohio. Manufactures have surpassed agriculture, once the occupation of most of the people, and these states must now be classed, along with those of the Northeast, as part of the predominantly manufacturing sections of the country.

VALUE OF MANUFACTURES IN THE OLD NORTHWEST TERRITORY

STATE	VALUE (IN MILLIONS OF DOLLARS)			PER CENT INCREASE 1880-1914
	1880	1899	1914	
Illinois.....	415	1,260	2,247	441
Ohio.....	348	832	1,783	412
Michigan.....	151	357	1,086	620
Indiana.....	148	378	731	393
Wisconsin.....	128	361	695	443

The Rocky Mountain and Pacific Coast regions. — Until after 1860 manufacturing in the Far West was of negligible amount. As late as 1880 the population of the whole region amounted to but three and one-half per cent of that of the United States. The relative amount of manufacturing, therefore, was small. Nevertheless, there has been a rapid industrial growth since 1890.

The South. — The southern Atlantic and Gulf states spent most of their energies from 1860 to 1890 in fighting the Civil War and recovering from its effects. Not until about 1900 had they got back to where they were in 1860. Soon after 1890, however, capital began gradually to take advantage of the natural opportunities of the South. Since 1900 investment has been more and more rapid, until at the present time certain of the states have become industrially prominent. Between 1890 and 1914 the value of the manufactures of North Carolina,

South Carolina, Georgia, Alabama, Mississippi, Louisiana, and Texas grew from three hundred thirty-nine million four hundred thousand dollars to one billion five hundred fifty-six million five hundred thousand dollars. Like the Middle West, the South has developed industrially far more rapidly since the beginning of the new century than the older manufacturing centers.

MANUFACTURES OF THE SOUTH, 1880-1914

STATE	VALUE (IN MILLIONS OF DOLLARS)			
	1880	1890	1904	1914
North Carolina.....	20.0	40.4	142.5	289.4
South Carolina.....	16.7	31.9	79.4	138.9
Georgia.....	36.4	68.9	151.0	253.3
Alabama.....	13.6	51.2	109.2	178.8
Mississippi.....	7.5	18.7	57.5	79.5
Louisiana.....	24.2	57.8	186.4	255.3
Texas.....	20.7	70.4	150.5	361.3
Total.....	139.1	339.3	876.5	1556.5

PER CENT INCREASE IN VALUE OF MANUFACTURES, NORTH AND SOUTH

STATE	PER CENT		
	1899-1904	1904-1909	1909-1914
Massachusetts.....	23.8	32.6	10.1
North Carolina.....	67.1	52.0	33.6
Rhode Island.....	22.1	38.7	00.3 ¹
South Carolina.....	48.8	42.7	22.7
New York.....	32.9	35.4	13.2
Georgia.....	59.8	34.3	24.8
Pennsylvania.....	18.5	34.3	7.8
Alabama.....	51.4	33.7	22.5
New Jersey.....	40.0	47.9	22.8
Texas.....	62.0	81.3	32.4

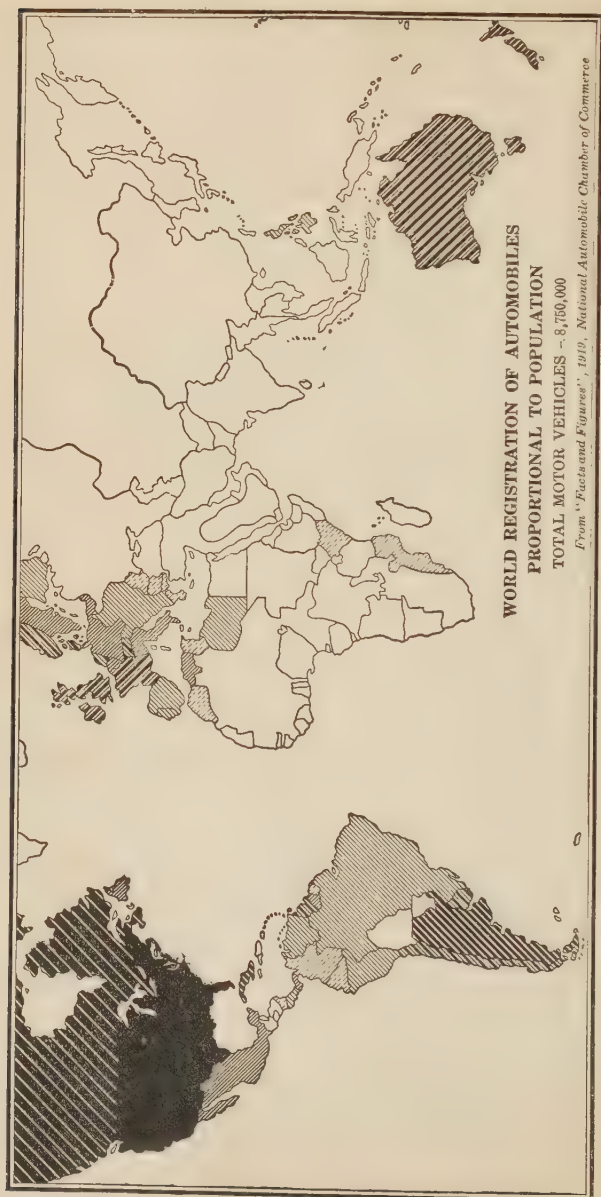
¹ Decrease

Manufactures of the Middle West. — For the growth of manufacturing described in the preceding pages the Middle West was well situated. The development of the rich agricultural resources had resulted in a large accumulation of wealth. Population had increased rapidly and markets had grown. There was abundant coal for power, and immigration and natural increase furnished the labor force. There was also discovered an almost unlimited supply of certain raw materials.

Iron and steel in the Middle West. — First among the available raw materials was iron ore. Very soon after the Civil War, Ohio took its place among the leaders in the production of iron. A little later Illinois likewise rose to a commanding position in this industry, and was followed after the opening of the twentieth century by Indiana. Within these states lay the coal for the engines and the furnaces; to the north were the beds of ore; between the ore and the furnaces was the cheapest of all transportation facilities — direct water communication. We therefore find at the present time the southern shores of Lakes Erie and Michigan dotted with important iron and steel cities.

Influence of agriculture on manufactures. — Agriculture supplied a market for certain kinds of manufactures which became prominent in the Middle West. Hence we find this whole district given up largely to the manufacture of agricultural implements and machinery. Ohio leads in the production of vehicles, Illinois in that of farm machinery, and, since the opening of the new century, Michigan in the manufacture of automobiles, a large part of which are trucks and tractors for farm use.

The raw materials afforded by agriculture also account for many manufactures of the Middle West. The sawmilling industry followed the forests. Moreover, it is in no small degree due to the abundance of hard wood in these states, as well as to the market, that the manufacture of agricultural implements became concentrated here. The wheat fields have built up the flour-milling industry, making Minnesota the leader of the world. The raising of milch cows, too, has resulted in



the growth since about 1890 of a great industry in the making of butter and cheese in factories.

The slaughtering and packing industry, the greatest industry of Illinois, and the one in which this state leads the world, likewise is dependent upon the raw products supplied by agriculture. The packing interests have settled in Chicago and a group of cities — Omaha, St. Joseph, Kansas City, St. Louis, and a few smaller centers — all within easy reach of the great cattle regions. The geographical location of this industry was once based almost wholly upon the raw material. Since 1890 the great packing houses have also established plants in the East. We connect beef and pork with Nebraska and Missouri, yet the value of the meat products made in New York State in 1914 was greater by far than that of either of these states and equaled nearly one-fourth that of Illinois. Even Massachusetts produced in value nearly one-half as much as Nebraska.

Manufactures of the Far West: *The leading industries.* — The character of the manufactures of the Far West depends almost wholly upon the market and the raw material. A very large part of the manufactures is intended for distant markets. It is the demand from distant sources for the articles produced from the characteristic raw materials of these sections which gives rise to much of their manufacturing. The raw materials afforded by the agricultural, the horticultural, and the fishery resources of California, Oregon, and Washington have resulted in a large industry in canning and preserving. The forests supply the material for an enormous lumber industry, and the oil wells of Southern California for large refining enterprises. In this state, too, the abounding sunshine produces sugar beets of highest quality with the resultant growth of an extensive sugar-refining interest. In the Mountain states smelting and refining of the precious metals have become the dominant manufacturing interests. In Colorado within recent years the production of iron and steel has taken a prominent place, due to the presence of both coal and iron ores in that state.

Power resources in the Far West. — One factor which has hindered a large development of manufacturing in all these regions has been the scarcity and high price of coal. With the opening of Alaska coal fields, however, this difficulty will be removed, at least for the states along the coast. In the mountain regions, moreover, there is located fully a third of the water



Courtesy of Armour and Co.

LABORATORY OF A PACKING PLANT

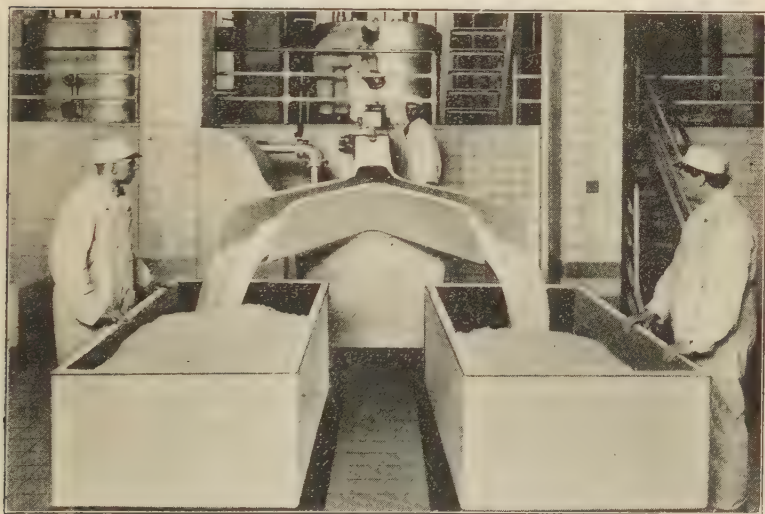
Every great industry now calls more and more upon science in reducing the cost of output and in improving the quality.

power of the country. As the demand arises, the development of this great resource, already begun, will undoubtedly be hastened. It may eventually make the Far West independent of coal.

The manufactures of the South. — As we have seen, it is only since about 1890 that the manufacturing of the South became in any way proportionate to the greatness of her resources. The soil is rich, and coal, iron, petroleum, and water power are

abundant. It is the land of cotton and the sugar cane. For over a century, indeed, the production of unrefined sugar has been a leading industry of Louisiana.

1. *Influence of cotton on Southern manufactures.* — Cotton revived the industrial life of the South. In 1880, when over eight million five hundred thousand spindles were making cotton



Courtesy of Armour and Co.

AN OLEOMARGARINE FACTORY

Oleomargarine is one of the by-products of a packing plant.

yarn in New England from raw materials derived mainly from the South, there were fewer than five hundred thousand in the four states, North Carolina, South Carolina, Georgia, and Alabama. Soon thereafter, however, outside capitalists began to invest in Southern cotton manufactures, so that by 1890 the number of spindles in the four states mentioned above had increased to over one million. From 1890 to 1914 the number had multiplied over ten times, so rapid had been the growth in the intervening years.

2. *By-products of the cotton plant.* — During the same years other enterprises connected with cotton were also taking an important place. The raw material of these industries, moreover, was the seed, which formerly went to waste. The oil which comes from the seed, when scientifically treated, has properties equal to those of lard or butter for cooking purposes. The seed is also used very extensively for cattle feeding. There has grown up, therefore, in almost all the Southern cotton-raising states the industry of preserving these values. In 1892 the total value of the cotton-seed by-products was only eighteen million dollars. So rapidly did they grow in public esteem, however, that by 1914 their value was over one hundred and fifty million dollars, and three years later this total had become about three hundred and sixty million dollars. Thirty years before almost all of this would have been thrown away.

Iron and steel manufactures of the South. — Since 1880 an extensive iron and steel industry has been developed in Alabama, owing to the proximity of coal and iron. Birmingham, the center of this industry, has grown within these years from a small village of three thousand to a city of over one hundred and seventy-eight thousand. At first the industry consisted chiefly of the production of pig iron. With the introduction of the open-hearth process (p. 370), however, the manufacture of steel began in Birmingham and has grown to large dimensions.

Lumbering in the South. — The last large Southern industry to be included here is sawmilling. With the exhaustion of the forests of the North, the lumbermen began to attack more vigorously those of the South. It has thus become the leading manufacturing industry of Mississippi and among the leaders in Alabama, Georgia, North Carolina, and Texas.

The manufactures of the Northeast: *The raw materials.* — It will have been noted that the proximity of raw materials has had a large influence in determining the character of the manufactures of the Middle West, the West, and the South. When we turn to the states of the Northeastern seaboard, however, we find that the nearness of raw material often plays only a

minor rôle or none at all. In New England there are but few manufacturing industries, great or small, which are not at a distance from the sources of raw material. Leaving out the iron industry and certain manufactures based on agricultural products and the forests, the same statement applies to the manufactures of the Middle Atlantic states. With the exceptions noted, industries based chiefly upon the proximity of raw materials could not have developed notably in these regions. Nevertheless, New England and the Middle Atlantic states in the number and variety of manufacturing enterprises, in the value of output per person, and in the percentage of people occupied in manufacturing are far in the lead of any other part of the country.

PROMINENT INDUSTRIES OF CERTAIN NORTHEASTERN STATES

MASSACHUSETTS. — Boots and shoes, cotton goods, woolens, electrical machinery, sugar refining, confectionery.

CONNECTICUT. — Brass ware, cotton goods, woolens, firearms, electrical machinery, silk goods.

RHODE ISLAND. — Machinery, cotton goods, woolens.

NEW YORK. — Tobacco, hosiery and knit goods, electrical machinery, boots and shoes, furniture, silks, iron and steel, clothing.

PENNSYLVANIA. — Woolens, silks, leather, hosiery and knit goods, petroleum refining, cotton goods, clothing.

NEW JERSEY. — Copper refining, petroleum refining, silks, electrical machinery, leather, chemicals, dyeing and finishing.

Hardly an industry mentioned above could, at the present time, be based upon the nearness of raw materials, and yet some of them are the most important of all in the states in which they occur. Indeed, Massachusetts leads all other states in its boot and shoe, cotton, woolen, and worsted manufactures; Connecticut in brass ware; New Jersey in silk and silk goods. Within the states of the Northeastern seaboard may be found hundreds of just such industries, some of them of great importance, many others much smaller, but few within short distances of the raw materials.

The market. — One of the leading causes of the continual growth of manufactures in the Northeast is the market. Here the people are settled more closely together than they are in any other part of the Union. The density of population is comparable to that of the thickly settled European nations. There is here, consequently, a tremendous local market for manufactured goods.

Moreover, the situation is excellent for disposing of surplus goods in markets far away. Located on the seaboard, with numerous of the world's most ample harbors, the Northeastern states are easily able to reach the ports of all lands. Besides all this, they are everywhere connected with the domestic markets by railroads, canals, lakes, and, since the opening of the Panama Canal, by ocean.

Early start in manufacturing. — Within these regions, moreover, people were manufacturing while the rest of the land was still a wilderness. They were the first, therefore, to build up a trade in American markets, and also got an early foothold in many foreign markets. The world became accustomed to buying their goods. In other words, they established everywhere what is known in trade as "good will." Their position is somewhat like that of the English in American markets after the Revolution.

Accumulation of capital. — In the third place, long establishment has resulted in the accumulation of capital in the Northeastern states. Here from one-third to one-half of the capital resources of the entire country have concentrated. With such an overwhelming power of wealth seeking investment, combined with such a market, there was bound to be a persistent and large growth of manufactures.

The labor supply. — In the fourth place, the labor supply is more abundant than anywhere else. Here the immigrants have landed and a large part of them have remained. We cannot emphasize too strongly the influence exerted by the constant stream of newcomers upon many of our greatest industries. The recent immigrant has supplied much of the skilled

labor and most of the unskilled. By him the cheap labor has been performed. We have seen the Irish taking up the work in the New England cotton mills after 1840. Since 1880 the great multitude from southern and eastern Europe have done most of the work in the steel and textile mills, the coal mines, the clothing trades, and a host of other industries.

Natural resources. — While the reasons just given for the growth and continuance of manufacturing in the Northeast are of the greatest importance, we must not lose sight of certain natural resources of much consequence. There is in most of these states, as we have before seen, an abundance of water power. In Pennsylvania and West Virginia there are large deposits of coal. In Pennsylvania and New York we also find great beds of iron ore. Owing to the presence of water power, and of coal near the seaboard, machinery can be run in all these states at comparatively small cost.

The quality of American manufactures. — As a result of the great quantity and varied character of its resources, the United States today possesses a wider range of manufacturing industries and also a larger number of vast size than any other nation in the world. Most of the inventive genius of the country has been expended upon the creation of machines, devices, and organizations for producing goods rapidly and in great quantities. The chief characteristic of American manufactures, we may safely say, is that they are machine made.

The deficiency of machines consists in their being unable to produce goods of the greatest delicacy combined with a high degree of art. They cannot think, and see beauty, and have sudden inspirations of genius; but they must go on doing one thing over and over in a fixed way. Our machines do not produce, for example, such pottery or such silk as France produces; such rugs as are made in western Asia; or such delicate and fanciful creations as the Japanese delight in. We do not produce, in general, such high grades of woolen and cotton goods as the English. The character of American manufactures results largely from the necessity of saving labor costs by substituting

the machine. And yet many American machines seem to have almost human sense. In this connection it is only necessary to mention our watches and firearms, both unexcelled in either serviceability or beauty.

Another characteristic of many American industries is that the manufactured product is but slightly different from the raw material. The changes wrought by labor and machinery are often so simple that authorities differ as to whether the product is a manufactured article or something else. Certainly much of it is merely raw material used in further manufacture. Some of our greatest manufacturing industries are those of small manufacturing changes, requiring little labor skill. Among such should be included sugar, metal, and petroleum refining; the meat-packing, the flour-milling, and the butter and cheese industries. It is worthy of note that in the manufacturing districts farthest from the raw material the per cent of value added by manufacture is likely to be rather high.

RANK OF CERTAIN INDUSTRIES IN 1909 IN

	VALUE OF FINISHED PRODUCT	VALUE ADDED BY MANUFACTURE
Slaughtering and packing.....	1	13
Flour and grist milling.....	5	18
Pig iron.....	14	30
Smelting and refining copper.....	16	43
Butter, cheese, condensed milk.....	19	51
Petroleum refining.....	24	53
Smelting and refining lead.....	30	87

PER CENT OF TOTAL VALUE ADDED BY MANUFACTURE IN

	1899	1909
New England.....	45.5	44.7
Middle Atlantic States.....	43.2	41.7
East Northern Central States.....	42.2	41.7
East Southern Central States.....	45.7	46.7
West Northern Central States.....	33.4	31.1
West Southern Central States.....	39.1	38.9
Mountain States.....	39.7	37.1
Southern Atlantic States.....	44.4	42.8
Pacific States.....	38.6	41.4

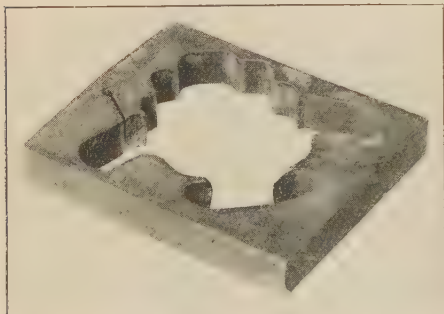
The iron and steel industry. — It is hard to believe that people seldom saw a piece of steel until after the Civil War. Before that time this common commodity of the present was expensive and extremely rare. It could be used only in small articles requiring the qualities of steel, such, for example, as razors, watch springs, and certain tools.

The Bessemer process. — In 1856 an invention was perfected by Henry Bessemer and Robert Mushet, two Englishmen, that was to revolutionize the face of the earth. This discovery was a method — since known as the Bessemer process — for making steel rapidly and cheaply. It consists of filling a pear-shaped “converter” holding some ten tons of metal with molten pig iron, and forcing through this mass twenty-five thousand cubic feet of cold air per minute for about ten minutes. This process oxidizes foreign substances from the metal, to which are later added such quantities of carbon and other elements as are required to produce any desired quality of steel.

The introduction of the Bessemer process in the United States took place in 1864 when an experimental plant was established at Wyandotte, Michigan. Between 1865 and 1875 numerous Bessemer companies were formed, one in Troy, New York, others at Pittsburgh, Johnstown, and elsewhere in Pennsylvania, and still others at Cleveland and Chicago. Among the plants then established were the Cambria Works at Johnstown, Pennsylvania, and the Edgar Thomson Works of Carnegie Brothers, Pittsburgh.

From the date of the first Bessemer steel mill there was rapid progress in the steel industry. America, as well as the rest of the civilized world, went over in twenty-five years from an iron to a steel basis. In 1867 we produced two thousand six hundred seventy-nine tons of Bessemer steel ingots, in 1880 over one million tons. By 1906 we reached the high-water mark of production by this process — over twelve million tons. Since that time Bessemer steel has been overshadowed by other kinds. To Bessemer, however, the world owes its debt for introducing it to steel.

The open-hearth process. — The Bessemer process could not handle to best advantage ores high in phosphorus. This handicap was lessened by improvements made by two Englishmen, Messrs. Thomas and Gilchrist, but the difficulty never was



Courtesy of the Davis-Bournonville Company

METAL-CUTTING BY OXY-ACETYLENE TORCH

Recently gas has come into competition with the machine tool in certain types of metal work. The design in the high-carbon steel plate nearly an inch thick, shown above, was cut by an oxy-acetylene torch at the rate of eight inches a minute. A similar torch cut the holes in the rings shown in the picture on the opposite page. Oxygen is used for cutting the steel parts of ships, bridges, buildings, and other engineering structures. Torches for welding are also very generally used to make seamless tubes, and to join together plates used in boilers, oil and gas tanks, ships, and automobile bodies. Since about 1897 cheap methods of producing oxygen have been enormously developed, two of the chief ones being the distillation of the gas from liquid air and the separation of the oxygen from the hydrogen in water by means of an electric current.

Martin process, so named from its discoverers. This new method made possible the use of many ores not formerly available. In general, too, it produced a better grade of steel. Consequently, as the Bessemer ores became more scarce, there was a gradual change to the new method. The change began in the 'nineties, and by 1908 the open-hearth had passed the Bessemer process in quantity of output. Since

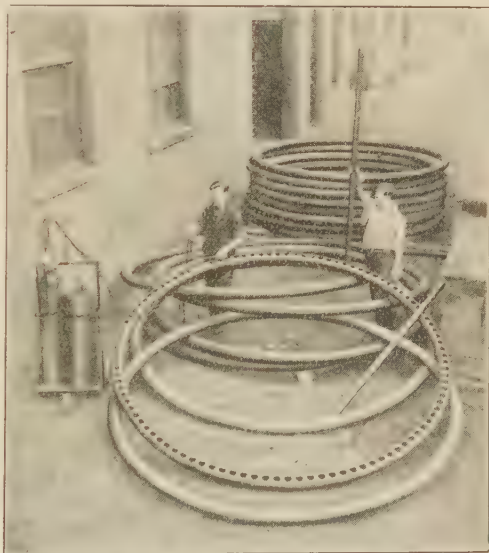
wholly overcome. In Lake Superior ores, however, there was a great quantity low in phosphorus, and, consequently, well adapted for the Bessemer process. It is due to these ores that Bessemer steel held its supremacy in the United States for so long a time. In no other steel-producing country did it ever reach such proportions.

In 1867 Abram Hewitt, United States Commissioner to the Paris Exposition held that year, returned with a new process for steel manufacture. This was the "open-hearth," or Siemens-

then it has steadily gained, while its older rival has hardly held its own.

The production of pig iron. — The cheapening and increased use of steel made it necessary to improve other branches of the iron industry. The blast furnace of 1850 could hardly have supplied the amount of pig iron needed for the steel manufacture since the war.

Hence, constant improvements have been made in the furnaces. In the first place, they are much larger. In 1850 the height varied from fifty to sixty feet, and the greatest diameter was about twelve feet. Modern furnaces are one hundred feet or more in height and have diameters of from twenty-two to twenty-five feet. Gases belching as waste from the furnace of 1850 now



Courtesy of the Davis-Bourneville Company

CIRCULAR HOLES CUT BY GAS TORCH IN RINGS
USED IN THE DISTILLATION OF OIL

heat engines which supply the blast for the furnace itself. The heat generated in a furnace of 1850 reached about 500°C , one-third of what it is today. The result of many such improvements has been an increase of furnace capacity from seventy or a hundred tons of pig iron daily to from three hundred to six hundred tons. In 1875 the record for one furnace for a week was seven hundred and fifty tons; in 1905 furnace "K" of the Edgar Thomson Works produced in a week over five thousand tons of pig iron.

Rolling, forging, and pressing. — Improved methods of treating steel mechanically were likewise made necessary in order to turn the product into the forms in which it is to be used and also to give it added strength. Three of the most common forms of treatment are forging, pressing, and rolling. Forged steel is subjected to the weight of hammers of thirty or forty tons. Pressed steel is made by the application of hydraulic pressure so intense as to squeeze closer together the molecules and close up any bubbles in masses of steel a foot or more in thickness. It is the most effective mechanical process for strengthening steel. Rolling, however, is the most rapid and the most common practice of the three. Developments in the making of rolls have made possible the creation of hundreds of different steel shapes and forms. The making of structural steel—the steel used in constructing great buildings, subways, and bridges—is an industry developed since 1860, and depends to a great extent upon devices for rolling ingots into any desired shape. The manufacture of rails is also in large measure a rolling process. Some American mills turn out a mile of rails per hour, twenty-four hours a day, six days a week. Through the rolls the white hot rails are sent at the rate of ten miles per hour.

Boots and shoes. — Although the manufacture of boots and shoes, as we have seen before (p. 184), was an important industry from earliest times, the modern shoe industry is entirely the creation of the last sixty years. The shoe factory is a good example of the industrial changes brought about by machinery. The beginning was made by a modification of the sewing machine, perfected in the 'fifties, for sewing together the uppers. In 1858 a further development took place through the invention by Lyman R. Blake of the McKay machine for sewing the uppers to the sole. Some years later the Goodyear welting machine was put into service, and a lasting machine was perfected. These are the fundamental machines of the present-day shoe trade. Many others have been invented for minor processes, such as making buttonholes, fastening on buttons, shaving heels, and nailing them on. The result is that a modern

shoe is made by the uninterrupted movement of dozens of different machines, each doing its task rapidly and well. The whole industry is an achievement of the latter half of the nineteenth century.

Cotton manufactures. — The first of our industries to be brought into the factory, the manufacture of cotton goods, has undergone steady expansion since the Civil War. A fair proportion of this growth was due to the rapidly developing market for cotton goods, which we noticed when studying the growth of manufactures before 1860 (p. 183). Protective tariffs kept up after the war threw practically the entire market of the United States into the hands of American manufacturers. The industry was consequently assured of an enormously strong foundation upon which to build.

Technical improvements as influenced by the market. — An assured market was not, however, the only basis upon which our cotton-goods industry rested. American manufacturers have adopted machines and methods designed to meet the demands of the home market. As we have seen before, the American demand was largely for plain goods and simple prints, which could be made in large quantities without change of machinery. The ring spinner was adapted to the manufacture of such goods, and would work much faster than the mule. Therefore, while the English continued to use the mule, the Americans turned more and more to the ring spinner.

Technical improvements as influenced by the labor supply. — A less skilled labor supply in American textile mills has also had an influence upon the kind of machinery used. American textile labor has for years been largely supplied by the new immigrant. The sons have not followed in the fathers' footsteps as they have in the older countries. This, perhaps, more than any other one thing, explains why the simple, more easily repaired and managed ring spinner has to a large extent excluded the mule from America.

The higher cost of American labor has also compelled the use of machinery that would turn out work faster than the machines

of competing nations where labor was cheaper. This factor also resulted in many improvements in the ring spinner, three hundred and seventy-three patents connected with this machine having been taken out between 1870 and 1903. The result was so to increase speed as to double the production per operative since 1860.

Technical improvements in weaving. — Since 1890 several important labor-saving devices for weaving have been invented. Among the more ingenious of these is the Barber warp-tying machine, which began to be used in 1904. This is a device for tying the ends of the thread together and is used chiefly in fastening a new warp to an old one in the loom. It will tie two hundred and fifty knots a minute, doing the work once done by twenty girls.

This and other labor-saving machines have tended to increase the speed while at the same time making it possible for one person to care for a larger number of looms. In 1832 a weaver might tend two or three ordinary looms, in 1879 five or six, and in 1910 eight or ten.

Perhaps the most important inventions have been the automatic looms, of which the Northrop,¹ perfected in 1894, has attained the greatest prominence. This machine is so devised that it will stop automatically if a warp breaks. It will refuse to go, likewise, if the shuttle, which carries the weft back and forth through the warp, is not in its proper place. Formerly, when a bobbin or cop, on which the weft thread is wound, became empty, the attendant had to stop the machinery to put in a new bobbin. This process the Northrop loom does itself without stop. On ordinary looms the shuttle has to be threaded by hand every time a new bobbin is put in. This process, too, the Northrop loom performs. Improvements since the invention first came out have made it possible to weave check goods of varying colors by automatic devices. In such weaving weft yarns of different colors have to be used, each color being automatically inserted in the warp at the proper time. With the

¹ See illustration, page 524.

invention of the automatic looms labor costs were again cut in two, a weaver being able to take care of from fourteen to thirty Northrop looms.

Technical improvements in knitting. — In the manufacture of knit goods ingenious American devices have played an important part since 1867. The most notable invention was that of an automatic seamless knitting machine¹ brought out by J. L. and E. R. Branson, of Philadelphia, between 1867 and 1889. This machine will knit stockings complete, widening and narrowing for heel and toe, and inserting extra yarn for their reënforcement. Moreover, it will go from stocking to stocking without stop or pause, unless, perchance, it detects a hole in the web, in which case it will automatically stop. These inventions, together with many others, notably improvements in needles and in methods of finishing, have revolutionized the knit-goods industry, from which practically all hand labor has been eliminated save only the easily acquired knowledge of how to keep a machine running.

Woolen manufactures: *The Civil War and the tariff.* — It will be remembered that the demands of the Civil War afforded a great stimulus to the woolen industry — a stimulus that was to a high degree artificial, bringing inflated profits and resulting in the establishment of many an inefficient organization, which, however, made profits from war-time prices. When peace came a successful move was made to raise a tariff wall which should shelter the whole woolen trade from the competition of the foreigners. From the Civil War until 1913, therefore, with the exception of the three years 1894 to 1897, this industry rested in large measure upon the protection of a high tariff.

The three fields of the woolen manufacture. — It is divided into three main fields — the manufacture of woollens, worsteds, and carpets and rugs. The first of these is the oldest, having gone through the same revolution as that of the cotton manufacture in the first half of the nineteenth century. Woollens are the product of short-staple wool, which is prepared for spinning by

¹ See illustration, page 529.

the carding process. The manufacture of worsteds has developed since the Civil War. Worsteds are the product of long-staple wool, the fibers being "combed" into shape for spinning. This process not only straightens out the fibers, laying them parallel with one another, but it also picks out the long ones, which are to be used, and rejects the short ones.

Specialization in the worsted industry. — In the manufacture of worsteds the European system of specialization, of breaking the industry up into separate parts, was gradually adopted toward the end of the nineteenth century. First the mills began to specialize on worsted yarn. Entire plants were given over to this manufacture, and from them the manufacturers of worsted cloth gradually began to seek their supply of yarn. Toward the end of the 'nineties the Arlington Mills, of Lawrence, Massachusetts, also began the manufacture of "tops" for the market. Tops are defined as "a bunch or bundle of long-stapled combed wool, or 'sliver,' ready for the spinner." Since the beginning of this specialized manufacture, it has had a large growth. The successful development of the worsted industry is due mainly to the changed methods that have been introduced in making worsteds. It is claimed that manufacturers of the cloth can oftentimes better afford to buy their yarn, than to go to the expense of erecting large mills for its manufacture. The same consideration holds true in the case of the manufacturers of yarns when they come to secure their tops. Since the first tops mill was erected, the bulk of the woolen and worsted industry of the country has been brought into one great combination. The different manufacturing steps, however, more and more continue to be taken in separate mills especially fitted for their own particular purpose.

Machinery in the woolen and worsted industries. — Unlike the cotton industry, the woolen and worsted manufacture has failed to develop distinctly American machinery. Dependence is placed for the greater part upon machinery made in England and other foreign countries.

Carpets and rugs. — The manufacture of carpets and rugs is a development of the latter half of the nineteenth century. Its growth rests in the main upon inventions, a large percentage of which were contributed by Americans.

Until nearly 1860 carpets and rugs the world over were the product of hand looms. The labor expended was extremely expensive, a condition reflected in the price of the goods. In 1844 Erastus P. Bigelow, of Boston, adapted the power loom to the weaving of ingrain carpets. A few years later he had also applied power to the weaving of Wilton, Brussels, and tapestry velvet carpets. In 1856 patents were taken out by others for the weaving of Axminsters. Upon these adaptations of an old machine to new uses is founded the modern carpet and rug industry.

Silk manufacture. — Unlike cottons and woolens, the manufacture of silk did not become a factory industry until after the opening of the Civil War. The silk fiber calls for more delicate handling than the woolen or cotton, and a much longer time was required to develop power machines which would do the work of spinning and weaving effectively. Moreover, silk goods were for a long time a luxury afforded only by the wealthy, and in the plain America of early days, the demand for them was very small. Before the war, therefore, silk manufacture was limited to the making of sewing twist. For this material a sufficient demand had been created by the invention of the sewing machine.

Technical improvements in silk manufacture. — Stimulated by a high Civil War tariff, which was never removed, the manufacture of silk goods began to grow. Within fifty years, moreover, inventors had adapted power machinery both to spinning (or "throwing," as the process of twisting the fibers into threads is called in the silk industry) and to weaving. Automatic machines similar to those in the cotton industry have also been developed. The result has been to eliminate a large part of the labor costs. Women, girls, and boys have, in large part, taken the place of men. The automatic devices have speeded up the

machines, so that one cheap, unskilled workman can tend two to four times as many as formerly. Meantime, immigration supplied the necessary cheap labor in abundance, and the industry for this reason centered in New Jersey and Pennsylvania, where the supply could be constantly replenished.

Growth of the silk industry. — At the present time the domestic market for silk goods is very largely supplied by the home manufacturers. Practically the only exceptions are in the case of goods of such exquisite quality as only the hand-loom weavers of France or China can supply. In 1860 nearly all our silks came from abroad. In 1913 only a small per cent of the value was from this source. In the meantime, moreover, consumption has increased a great many times faster than the population.

Clothing. — Until recently the clothing industry has been less affected by machinery than most other American manufactures. In this industry the manufacturing methods were more nearly like those of European and Asiatic countries. This fact is to be explained by cheap labor. In spite of generally high labor costs, there has, nevertheless, usually been a supply of very cheap labor in the United States. It consisted mainly of women and children who wanted a little pin money, of widows who had families to support, and of newly arrived immigrants, ignorant of the language and general conditions. These laborers would work very cheaply at home, and by them American clothing was made for a century. To the labor situation is also due the fact that the industry naturally centers in the largest cities. By far the greater part of all ready-made clothing has always been made in New York, Philadelphia, Chicago, Baltimore, and Cincinnati.

The manufacture of food. — The process of converting the raw material of foodstuffs into articles ready for consumption has been in great part moved from the household to the mill or the factory. It has also undergone the changes which all recognize as part of modern industrial life — concentration in vast establishments. These changes were hastened by the

entrance of women into industry. Women, like men, have more and more deserted the multifarious duties of the old-fashioned household, and have taken up some special form of industry. They, too, have become specialists. Hence, the preparation of food is done more and more outside the home.

The packing industry. — The meat industry has for many years been one of the first in the value of its products. It is an industry, however, which has not had to depend largely upon



Courtesy of Armour and Company

GENERAL VIEW; CHICAGO STOCKYARDS

machinery. It simply grows with the number of cattle, hogs, and sheep. It, therefore, rests almost wholly upon the abundance of raw material, and is one of those semimanufacturing industries which we noticed on another page (p. 368). One invention, the process of refrigeration, introduced in the 'seventies, made possible the sending of fresh meats to distant markets, and thus stimulated a still greater concentration of the packers near the raw material.

An important result of the concentration of the packing industry is the increased saving of waste products. No part of

the carcass is thrown away. One of the principal by-products of the packing plants is fertilizers, the manufacture of which is largely under the control of the packers. As the farm lands lose their fertility, the conservation of every means of restoration becomes more and more to be desired. In this work some of



Courtesy of Armour and Company

BEEF COOLER

Beef and other meats are kept just above the freezing point. They can be preserved in perfectly fresh condition, and then may be transported anywhere and in all seasons.

the great industrial plants are playing an increasingly important part.

The manufacture of flour and other cereal preparations. — As we have seen before (p. 195), the manufacture of flour was at one time the work of small mills established in almost every neighborhood. When the raising of a few acres of wheat, rye, or other cereals ceased to be a part of almost every farmer's task, however, and the cereal crops came more and more to be confined to certain localities best favored for their production,

the flour mills began to concentrate. When the wheat fields moved farther into the West, especially as the lands of Minnesota and the Dakotas were opened up, a movement which began early in the second half of the nineteenth century, flour milling began to center at Minneapolis. This movement was very much accelerated when railroads from the wheat country were completed to this point. Perhaps as greatly influential on the concentration of the industry was the "new process" described elsewhere (p. 470).

Prepared foods. — Since about 1880 the production of prepared foods has become an industry of rapidly growing importance. Bread making has been largely taken from the household and is done more and more in the bakery. There has also been an enormous growth of the manufacture of foods ready, or nearly ready, for the table. Thus, the manufacture of biscuits, or crackers, and other kinds of cereal food, such as the numerous breakfast foods, has become a well-established and very large industry. More and more, too, have the canning and preserving of vegetables and fruit been taken from the household to the large factory.

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QUESTIONS

1. Describe the increase of manufacturing in the Middle West, the Far West, and the South since 1860.
2. What advantages for manufacturing were found in the Middle West after the Civil War? Explain the growth in the iron industry in certain of the states of the old Northwest. What manufactures were stimulated by the agricultural resources of the Middle West? Locate these manufactures.
3. What are the principal manufactures of the Far West, and upon what influences do they depend? Describe the power resources of this region.
4. What advantages for manufacturing are possessed by the South? Tell of the development of manufactures based upon cotton.
5. Describe the iron and steel industry of Alabama. Locate the Southern lumber-manufacturing districts.
6. What can you say as to the dependence of the manufactures of the Northeast upon nearness to the raw material? Mention the leading manufactures of this section in which the raw materials have to come from long distances.
7. What influences have determined the location of manufactures in the Northeast? Describe the advantages of the Northeast as to the

market. What is meant by "good will," and what influences does it have on the location of industries? What has been the situation in the Northeast as to capital and a labor supply? What are the chief natural resources for manufacturing easily accessible to the Northeastern states?

8. Why are American manufactures mainly machine made? How does the quality of machine-made goods differ from that of goods on which more human labor has been expended? Are handmade goods more serviceable than those made by machines? Why have American goods been characterized by the slight value added by manufacture? Will this be a permanent, or gradually disappearing characteristic?

9. Give an account of the Bessemer process and of its growth in the United States. In what respects was this process deficient? Why was it more generally used here than in foreign countries? Trace the growth of the use of the open-hearth method of producing steel. What improvements have been made in blast furnaces since 1850?

10. Name and describe the leading mechanical methods of treating steel.

11. Describe the development of shoe machinery. Compare the modern factories with those of 1850.

12. Upon what foundations has the development of cotton manufacture rested since the Civil War? What were the chief characteristics of the American demand for cotton goods? How is the ring spinner especially adapted to meet this demand? How is it adapted to the labor supply in American mills?

13. Describe the development of automatic weaving machines. What effects have these had on labor costs? What improvements in knitting machinery have been made?

14. What were the effects of the Civil War on woolen manufacture? How has foreign competition been met since the war?

15. What are the three chief fields of the woolen manufacturing industry? What is the difference between woolens and worsteds? Describe the manner in which specialization has taken place in the worsted industry. What are "tops"? Could protective tariffs have been responsible for the failure of the woolen industry to develop distinctly American machinery?

16. Up to 1860 how and where were most fine carpets made? Describe the developments that have taken place since that time.

17. What was the status of the silk manufacture up to the Civil War? What improvements in methods have been made since that time? What changes in the American market made possible a great silk industry?

18. In what respects has the manufacture of clothing differed from most other industries? Where is the bulk of the industry located?

19. Describe the revolution that has taken place in the preparation of food. What are the chief characteristics of the meat industry? What

has been the effect of refrigeration? In what way does the concentration of this industry prevent waste? Show how the manufacture of flour differs now from the methods of 1850. What influences caused the industry to concentrate at Minneapolis? Name as many former household activities as you can that have been taken to the factory. What results has the movement of industries from the home to the factory had upon the home?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the spread of manufacturing interests endangers the food supply of the United States.
2. Resolved that all refrigerating facilities should be controlled by the federal and the state governments (or by coöperative societies of producers and consumers).
3. Resolved that no industry is worthy of development that cannot stand on its own feet.

CHAPTER XXII

INDUSTRIAL COMPETITION AND COMBINATION

Increasing intensity of competition

 The struggle for the natural resources

 The struggle for the market

 The panic of 1873

Growth in size of plants

 Panics and the increased size of industrial establishments

 Competition among large industries

Railroad-rate wars

Efforts to get rid of competition

 Pools

 Trusts

 The holding company

 Industrial amalgamation

 Further industrial integration

The tendency for competition to disappear

Combination in other industrial groups

Public opposition to industrial combinations

 The absorption of the natural resources

 The fear of monopoly

 Ruthless competition

 Interlocking directorates

 The association of politics and business

 The evasion of the law

 Hostility of combinations to labor organizations

Increasing intensity of competition. — The years from 1865 to 1896 were a period of intense competition. The generally accepted notion was that the laws of competition among individuals free to act in their own interests were the laws of nature or of God, from which it was useless to appeal. As expressed by Edward Atkinson, "The natural law of free exchange and competition evolves high wages, low prices, large products, and a lessened margin of profits on each unit of product. That is the law of progress."

The struggle for the natural resources. — Under this law men hastened to exploit the natural resources and seize upon the markets of the New World. Everybody was saying to the government, "Hands off. Let each man carve his destiny in his own way." Unhampered, unregulated competition was the doctrine of the hour. It mattered not what a person's methods were. It mattered not whether they were economical or wasteful; whether they were the ways of the thrifty or the spendthrift; whether, even, they were just or unjust, legal or illegal. For thirty years after the close of the war, as if to make up for the interruption, a feverish struggle for the natural resources went on. The iron regions of the Great Lakes, the copper mines of Michigan, and the deposits of gold, silver, and copper in the Western mountain districts were rapidly absorbed. The vast fields of coal and petroleum, the noble forests of the Upper Mississippi Valley, the South, and the Far West were seized upon for private exploitation. If the government interfered at all, it was only to assist in the process, as in the case of the Homestead Act (1862), which encouraged men to press farther and farther into the Western prairies for land; or in that of the gift of lands and loans of money to the Union and Northern Pacific railroads.

The struggle for the market. — Quite as intense was the struggle for the market which was being created by growing population and wealth. In this struggle, too, while repudiating all restrictions, men were demanding assistance for their activities. High protective tariffs, passed as war measures, were afterward maintained and even increased, at the insistence of private interests. In this way the manufacturers of iron and steel, woolen and cotton goods, boots and shoes, and many other articles were able practically to monopolize the American market, one of the most tremendous and rapidly growing in the world.

How great this market was becoming as decade followed decade, we have elsewhere shown in detail (p. 328). The following tables give some added information on the point, and also

show how great a part of the home demands were supplied by our own factories and shops:

YEAR	RAW COTTON USED (Million Pounds)	VALUE (Mil. Dol- lars) COTTON MANUFACTURES	EXPORTS (Mil. Dol's) COTTON MANUFAC- TURES	IMPORTS (Mil. Dol's) COTTON MANUFAC- TURES
1860	422.7	115.7	10.9	33.2
1870	398.3	177.5	3.8	23.4
1880	750.3	192.1	10.0	29.9
1890	1,118.0	268.0	10.0	29.9
1900	1,818.0	339.2	24.0	41.3

VALUE ALL DOMESTIC MANUFACTURES

1860	\$1,885,861,676	1900	\$11,406,926,701
1870	4,232,325,442	1904	14,793,903,000
1880	5,369,579,191	1909	20,672,052,000
1890	9,372,379,000	1914	24,246,435,000

The following table gives roughly the per cent of the home market for all manufactures that was supplied by domestic manufactures:

YEAR	PER CENT
1860	89
1870	94
1880	94
1890	96
1900	97

The panic of 1873. — Between 1865 and 1873 the industrial expansion had been so rapid that in the latter year a great panic occurred. The causes were similar to those which we described as preceding the panic of 1837 (p. 208). Simply stated, men went too much into debt, hoping to square themselves when the returns began to come in. Debts were piled on debts, but as the expected returns did not come in fast enough, there suddenly came a collapse, accompanied by hundreds of business and banking failures, followed by four or five years of business stagnation.

As an illustration of how capital was going into new enterprises before the coming of the crash, the building of railroads may be cited. In the eight years from 1865 to 1873 thirty-five thousand miles were laid — more than doubling the entire mileage of the country. The expansion in railroad building was accompanied by expansion in all other lines of activity. Taken altogether the country was unable for the moment to absorb all that was produced. Hence the panic and the period of slow industrial development, while business waited for the country to catch up with it.

About 1877 the years of waiting came to an end, and industry began to forge ahead once more. In a short time the country was again overinvesting, overspeculating, and too rapidly expanding, all to be followed by the inevitable decline. In this way for forty years and more the economic development of the nation moved in waves, now rising to a high crest of activity, and then falling into the trough of depression.

Growth in size of plants. — Growing markets led to enlarged industrial organization. No longer could the simple methods of earlier days keep up with the demands which widespread prosperity made upon them. Factories lent themselves to indefinite expansion. The only limit to their growth was the economy with which they could be run. Up to a certain point, it was generally found that costs fell as the size of plants increased. The abundance of raw materials likewise required factories large enough to handle them. For the same reason railroad systems had to grow so as to be in a position to handle economically and rapidly the enormous amounts of freight that must be transported. Even when the factories had reached the maximum efficient size, the organization continued to grow. Control of the market necessitated control of production. The industrial organizations, therefore, reached out to secure the producing plants. Thus an "establishment" of 1900 might consist of what had been many "establishments" in 1880. The following tables, showing the growth in the size of establishments in a few industries, illustrate what was going on in all:

COTTON GOODS

YEAR	NUMBER OF ESTABLISHMENTS	TOTAL VALUE OF PRODUCTS (ADD 000)	AVERAGE VALUE PER ESTABLISHMENT
1860	1,091	\$115,682	\$106,000
1870	956	177,490	186,000
1880	756	192,090	254,000
1890	905	726,982	296,000
1900	1,055	339,200	322,000

WOOLENS, WORSTEDS, CARPETS, AND RUGS

1860	1,476	73,454	49,700
1870	3,208	199,257	62,000
1880	2,330	238,086	102,000
1890	1,693	270,528	160,000
1900	1,414	296,990	210,000

SILKS

1860	139	6,608	47,000
1870	86	12,211	142,000
1880	382	41,033	107,000
1890	472	87,298	185,000
1900	483	107,256	222,000

STEEL WORKS AND ROLLING MILLS

1870	422	137,568	326,000
1880	451	207,242	459,000
1890	415	333,044	802,000
1900	445	597,212	1,342,000
1905	415	673,965	1,624,000
1909	446	985,723	2,210,000

Panics and increased size of industrial establishments. — It is well also at this point to note the influence which industrial depressions had upon the growth in size of individual establishments. Every panic or depression left many enterprises bankrupt. Oftentimes those which had been strong enough to weather the storm then proceeded to pick up the bankrupts at small cost. Between 1873 and 1883 hundreds of miles of railroads — usually the smaller lines — were merged into stronger systems or were brought under control in some other way.

The same is true of the years 1886 to 1893 and of 1898 to 1906 — both being periods between panics.

Competition among large industries. — As industrial units grew, fiercer competition took place. Competition between small industries, although active, was, nevertheless, of the nature of local battles. If one side or the other were crushed



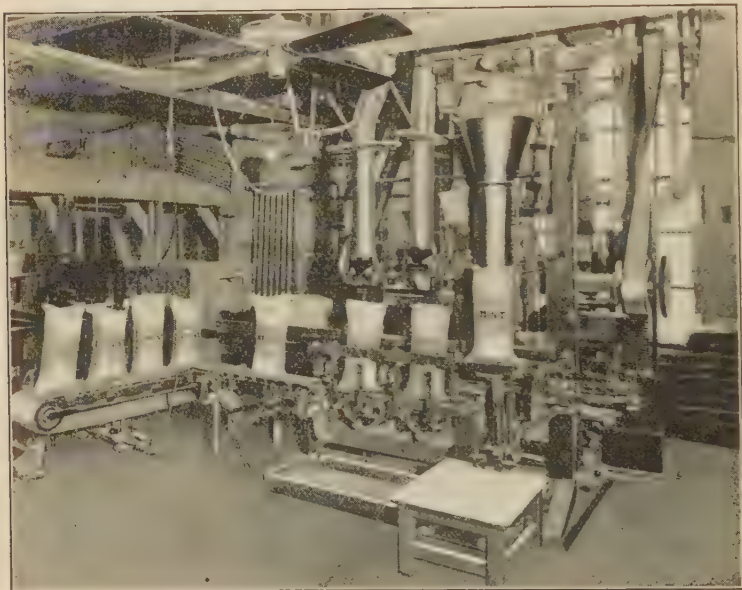
Courtesy of the Pillsbury Flour Mills Company

THE LARGEST FLOUR MILL IN THE WORLD

This is one of the Minneapolis mills. The concentration of the flour-milling industry is a good example of what has been happening in many other industries as well. It takes a huge amount of capital to finance such establishments as the one shown in this picture and to install such labor-saving machinery as that shown on the following page.

by it, the world as a whole was little affected. Competition between the larger units, however, was another matter. A struggle among them was like a battle of giants, often resulting in widespread disaster. It was a struggle in which the strength of both sides was so great that perhaps neither could quite overpower the other, and the chances were that both would be ex-

hausted at the end. Moreover, so vast was becoming the capital employed, drawn, perhaps, from thousands of homes, and so great were the numbers of men engaged, that the lives of many people would be affected. Because of the close connection of the antagonists with other industries and with banking institutions, these, too, might be involved in the general ruin. The very fearfulness



Courtesy of the Pillsbury Flour Mills Company

GIANT FLOUR-PACKING MACHINE, AUTOMATICALLY FILLING, WEIGHING,
AND SEWING FLOUR SACKS

of unrestricted competition was thus compelling men to revise their long-established notions as to the benefits derived from it.

Railroad-rate wars. — The railroads were among the first to feel the effects of the intensified competition due to expansion. End to end railroads, practically the only kind to exist until after 1860, did not suffer from competition with one another. It was only as these roads were brought into larger parallel systems connecting the seaboard with Western points (p. 271),

that real competition began. From 1870 to 1880 there were great railroad-rate wars. In these struggles rates were reduced to such an absurd figure that no road could continue them without bringing ruin upon itself. Especially intense was the competition during the crisis of 1873 and afterward, while business and industry were depressed and comparatively little freight was being shipped. The inevitable result was that many weak roads were forced to give up the struggle and were taken into stronger hands. Similarly, after the depression of 1884 and the crisis of 1893, many other roads were absorbed. Up to 1870 the greatest systems were not over one thousand miles in length. Between 1870 and 1890 a number of from two thousand to five thousand miles had been established, and by 1901 the eight thousand or ten thousand mile system was not uncommon. It was becoming more and more plain that competition was exhausting the strong, and putting an end to the independent existence of many of the weak.

Efforts to get rid of competition, 1870 to 1901. — During the very years when men were insisting on individual freedom to compete with one another, therefore, their actual practices were becoming more and more at variance with their theories. In order to avoid the waste and destruction of competition, there was a growing tendency for competitors to get together and agree upon some form of division of work and profits. During the years from 1870 to 1901 four principal sorts of agreements were tried: the pool, the trust, the holding company, and industrial amalgamation.

Pools. — The first of these agreements, the pool, was tried most extensively on the railroads. Pools were made necessary in order to meet the hardships of the years following the panic of 1873. The most effective kind of railroad pools was an agreement among the separate managements (1) to maintain certain specified rates, (2) not to compete for business, and (3) to divide the business or the revenues among the members in accordance with percentages fixed upon in advance.

One of the earliest, most successful, and longest-lived organizations of this kind was the Southern Railway and Steamship Association, formed in 1875. An agreement of some sort was particularly needed among the railroads of the South, as the business of this section was unable to support all the roads for a long time after the war. Competition was very keen, therefore, for what freight there was, resulting in rate wars and unprofitable operation. A number of other pools were formed between 1875 and 1887 among competing railroads in other sections of the country.

The life of a pool was oftentimes short. The agreements were not contracts and could not be enforced by law. Some member would begin secretly to violate its pledges, or would be suspected of so doing, and soon the agreements would be broken. Most people, too, believed that pools were merely arrangements by which the railroads hoped to impose unreasonable rates on the public. There was, consequently, a great popular outcry against them. Moreover, in 1887 Congress made the pool illegal. In the minds both of the people and of Congress such understandings were antagonistic to free competition. In the effort to preserve competition pools were, therefore, outlawed.

Nevertheless, in spite of the laws and popular opinion, harmony among the competing roads over the question of rates and division of traffic was more and more completely effected as the years went by. The associations, which were originally formed as pools to control rates, in a number of instances continued for other purposes. Where there were no such associations, the roads came in some other way to an understanding with one another. By the end of the century competition over rates had practically ceased throughout the country. Henceforth it was to matter little over what route freight went from an Eastern point to Chicago or from Chicago to the Pacific coast. The rate in all cases would be the same.

Trusts. — Pooling among other interests was also common. In all cases the end in view was the elimination of competition.

As with the railroads, too, such agreements continued even after pools had been made illegal, but they were so conducted as to evade the law.

The legal minds of the great industries, moreover, were put to work to devise some scheme which would release business from the dangers of competitive warfare and which would also pass through the barriers of the law. In the eighties the trust was hit upon for this purpose. A trust is an old legal creation under which certain businesses are directed by appointed trustees, who are made responsible for the faithful performance of their duties. Some of the most common examples of trusteeship are found in the administration of charitable or other public institutions, or of estates left to persons, who, for the time being, are incapable of managing their own affairs. The use of this device for bringing competing businesses under one management began to attract notice early in the 'eighties, when the Standard Oil Trust was formed. Here was an example of a number of large competing oil-refining companies whose stockholders placed their stock in the hands of a single group of men as trustees. The aim of this trusteeship was, of course, not that of an ordinary one. Its purpose was to secure harmony and coöperation among the different concerns which had hitherto been competitors. The example of the Standard Oil was soon followed by others who wished to get rid of competition.

The holding company. — It soon appeared, however, that trusts would be no more effective in meeting the requirements of the law than pools had been. Beginning in 1888 numerous decisions of state courts held them illegal, and in 1890 Congress also outlawed them in the Sherman Antitrust Act (p. 427). Resort was then made to the device of the holding company. This consisted of the formation of a corporation authorized to buy and hold the stocks of other companies. The organization was accomplished by the exchange of the stock of the holding company for that of the various concerns which it desired to control. Again taking the oil-refining companies as an example,

the dividends formerly paid to the stockholders of the different concerns were paid instead to the Standard Oil Company, which was the holding company, and this, in turn, distributed the funds to the holders of its own stock, that is, to the former owners of the stock of the separate companies.

Previous to 1889 state corporation laws did not permit the holding company. In that year, however, New Jersey remodeled its laws so as to allow the practice. Henceforth, a corporation chartered in that state need have no business whatever except "to hold the shares of other concerns, elect officers, receive dividends from constituent companies, and turn them over to their own stock or bond holders."¹ Other states soon followed the example of New Jersey, and from 1897 to 1904 the organization of industrial combinations by means of the holding company took place on a scale never seen in the world before or since. Antitrust laws of states which attempted to control or prevent monopolies were thus nullified, because there was no way of preventing a corporation chartered in one of the states from doing business in any of the others. Driven by the law and court decisions out of one state, a monopolistic organization had but to reorganize under the laws of one of the charter-mongering states in order to do business as usual in any part of the Union.

Industrial amalgamation. — The trust and the holding company were merely devices invented to do something which the law did not permit. Neither the trustees in a trust nor the holding company actually engaged in manufacturing operations. These were still performed by the different units that had been brought into the combination. In many instances, however, harmony of operation was brought about by the actual absorption by a single organization of various competing plants. Some of the greatest combinations have been formed in this way. They, too, are popularly known as "trusts." But, in fact, such organizations own the plants and conduct the financial and industrial operations. They are really colossal manufacturers.

¹ Ripley, W. Z., *Trusts, Pools, and Corporations*, p. xix.

Further industrial integration. — After the crisis of 1893, moreover, there was a growing tendency for the great industrial organization to control not merely a certain line of manufacture, but the raw materials and oftentimes transportation facilities as well. For example, the United States Steel Corporation came into possession of large parts of the Lake Superior and Alabama iron-ore fields and of much of the best coking coal; it acquired docks, wharves, and pockets where the ore is loaded and unloaded, and a large fleet of ore ships on the lakes; moreover, this fleet is met at Lake Erie points by the Corporation's own line of railroad running to the furnaces of Pittsburgh. Its own ore, therefore, became the raw material for its blast furnaces; its pig iron for its steel mills; its steel for the tube, sheet steel, wire, and rolling mills which it controls.¹ Such integration became more and more common among the great industries.

The tendency for competition to disappear. — The movement toward harmony among industrial units did not rest, however, merely upon uncertain devices, which might at any time be overturned by the courts, or even upon actual amalgamation. It was based upon a real revolution in the way people everywhere conducted their affairs. In spite of the fact that men fondly clung to the idea that competition is the life of trade, they were leaving the theory behind in actual practice. Although pools were illegal, somehow the railroads managed to charge uniform rates, and in this respect they did not compete at all. Not only of the railroads is this true. Since the end of the last century there are few articles bought and sold of which the prices are not nearly uniform for similar grades. There are variations, to be sure, in different parts of the country, but these are usually due to transportation charges or other local causes. In a given locality, however, few stores really compete in prices. Butter, for instance, costs practically the same in one store as another. The only competition in this respect comes between

¹The iron manufacturers turned out thirty-one million tons of pig iron in 1919. Of this amount over twenty-two million tons were for their own use.

large department stores or chain stores and the regular old-time small store. The disappearance of competition, therefore, was not the result of illegal combinations alone. It really was a revolution in the customs of a whole people.

Combination in other industrial groups. — Further on we shall see the same tendency to do away with competition at work among other industrial groups. Labor unions (p. 522) were but an attempt of the workingmen to come to agreements so that they would not compete with one another and thus force wages down. The whole idea of the union is uniformity — sameness — sameness in wages, in hours of labor, and in working conditions. Again, we see a similar movement in the farmers' coöperative societies. Here likewise we find a large group of men doing the same kind of work, who are attempting to prevent competition among themselves. Uniformity is their motto — uniformity of price, of grades of commodities, and of transportation rates. Wherever we look we find the idea of coöperation taking the place in actual practice of the old idea of competition. In so far as we have progressed with the new idea, we have moved in the direction of a new revolution no less marked than the one which took place in England at the end of the eighteenth century and in America during the first half of the nineteenth century.

Public opposition to industrial combinations. — In spite of the growing tendency toward coöperation, there has been strong opposition to the movement. This is especially true in respect to organizations of capital. Beginning with the formation of the railroad pools in the 'seventies, there has been a swelling volume of protest against the growing size of industrial units, and particularly against combinations which brought under a single control many corporations, each of which was of great size and power.

Public opposition was caused by fear of (1) absorption of the natural resources, (2) monopoly, (3) ruthless and dishonest methods of competition, (4) interlocking directorates, (5) the influence of corporations on government, (6) their open evasion

of the law, and (7) the hostility of big business to labor organizations.

Absorption of the natural resources. — As long as there was a plentiful supply of unappropriated resources, most men, as we have seen, were willing to compete for them. All they demanded was to be let alone. Gradually, however, the number of people became so great that newcomers found it increasingly difficult to get a good place at the table. By 1880 most of the cheap available lands had been occupied. Much of the coal land already was in private hands. The next twenty years saw the most important mines of iron, copper, silver, and gold, the greater portion of the petroleum fields, the forests of the Middle West and a large part of those of the Rocky Mountain and Pacific Coast regions disappear into the hands of the fortunate individuals and interests that had got there first. Equality of opportunity seemed to have disappeared. Herein we find a fundamental cause of the demand for public regulation or ownership of natural resources and industries. Population has not ceased to grow, while the resources remain stationary or decline. The question is, how the newcomers shall find a desirable place, when most of such places are already filled by those who were present when opportunities were more abundant and who have become established in their positions of wealth and power.

Furthermore, alarm was felt at the reckless waste of resources, due in part to their abundance, and in part to the competitive system under which they were being exploited. By 1880 men were already fearing their exhaustion in the near future. The alarm thus felt led after 1900 to a movement for conservation and the checking of the waste.

The fear of monopoly. — People have a natural distrust of monopolies. The English had for centuries been taught to fear them, and this feeling had come with them to America. Here it waxed even stronger than it had been at home. As corporate enterprises were seen swallowing up smaller concerns, the feeling of hostility to them grew more intense.

Ruthless competition. — Fears were aroused not only by what the combinations might do once a monopoly was secured, but still more by what numerous great corporations actually did. By "gunman" or sneak thief tactics they often robbed not only individuals, but governments. In many instances large interests came into possession of vast stores of natural resources by the most ruthless sorts of banditry. Unscrupulous measures were taken to crush the life out of rivals, and agreements were made to raise prices. Too often was there a bold defiance of law, of public opinion and interests, and of all the rules of morality and fair dealing. Such practices were so common on the part of great combinations that popular suspicion came to be directed against all businesses that were big, no matter how well they might be run.

Unfair competition in transportation was perhaps the most common. By forming some sort of illegitimate relationship with railroads and other transportation agencies, many great combinations were established. They were not built up by superior business methods, but in many cases by the receipt of favors that were denied their rivals. This practice was first brought to public view by a famous investigation made in 1879 by a committee — known as the Hepburn Committee — of the New York legislature. The report of this body disclosed the fact that some shippers were paying from two to five times the rates that were paid by others. In six months of a single year it was found that the New York Central Railroad alone had granted six thousand special rates. It was during the decade 1870 to 1880 that the foundations of the power of the Standard Oil Company were laid, and these foundations rested almost entirely upon the receipt of favors from the railroads.

By similar methods other combinations were formed. What we know as the "Beef Trust" owes much of its great power to the fact that certain packers were able to force the railroads to carry their products at rates far below the published schedules. So great had the power of the packers become that they frequently set the rate that they would pay for the transportation

of their products. In this, as in many other respects, the railroad management had little to say.¹

Such discriminations were disastrous to the railroads, as well as to competitors of the "trusts." They lost enormous revenues through the giving of rebates or other favors. One investigator stated in 1888 that the railroads were losing one hundred million dollars a year in this way. About twenty years later a prominent railroad official said that the income of his road would amount to fifteen per cent more annually but for the payment of rebates. These great sums were thus diverted from their rightful owners — the stockholders and the patrons of the roads. They were taken, moreover, during years (1875–1905) when many a road was struggling in vain to get upon a sound financial basis. In this manner the transportation system was put in jeopardy, and the vital interests of the entire nation were endangered.

Interlocking directorates. — It may be asked why the railroads permitted such high-handed interference with their affairs. The complete answer to this question would involve many complexities, but two of the most important reasons seem clear. The first one is the struggle for business. Competition for the carrying trade of large concerns led to the practice of rebating, and as the concerns grew stronger, the practice became confirmed, and often compulsory, as we have seen.

Another reason is the interlocking directorate. This means that the same persons are directors in several different concerns. The interlocking directorate came with the rapid accumulation of capital after the Civil War. Ordinarily there would be no objection to the practice. The evil arose from the interlocking of the directorates of the great industrial organizations with those of the banks and railroads. Through their control of finances and transportation, banks and railroads occupy a strategic position which enables them at will to retard the progress of one industry and help that of another. They are under moral obligation, therefore, to be neutral and

¹ Parsons, Frank, *Heart of the Railroad Problem*, p. 187.

to serve all people alike. When, however, large corporations came to be represented in the directorates of many banks and railroads, the natural result was for the latter to serve the corporations represented first and best, and others last and indifferently. Elsewhere (p. 461) we shall see how certain large banking houses in New York, Chicago, Boston, and a few other great centers, came after the beginning of the twentieth century more and more to control the finances of the country. Dominating the banks through their directorates, however, were the chiefs of the steel, the oil, the beef, the sugar, the copper, the tobacco, and many other large industrial interests. In the same way these interests became, to a greater and greater degree, represented on the boards of directors of the leading railroads. It was largely through these two causes — competition and interlocking directorates — that railroads so generally became the tools for building up great combinations and monopolies.

The association of politics and business. — Another important reason why many people came to distrust big industrial organizations was their relation to the government. It is not our purpose here to go into the details of this relationship. It is enough to say that ever since the Civil War ended evidence has constantly tended to show a suspiciously close connection between many great corporations and the lawmaking and law-enforcing bodies. One of these evidences is the lavish distribution of free passes by the railroads. During the last quarter of the nineteenth century almost anyone with a little influence in a community could secure free transportation. Without request on the part of the recipients annual passes were regularly sent out to state and federal administrative officials, legislators, and judges. For some years the "deadhead" often crowded the paying passengers on trains. For all this liberality, of course, a due return was expected.

Another evidence of the influence of business on legislation is the lobby. At state capitals and at Washington many great corporations maintained expensive agents who were to fight the

passage of unfriendly laws and push through those which were desired. It is impossible to say how much influence such lobbying has exerted. There is little doubt, however, that at certain times and places it has been very great. State legislatures often were extremely corrupt, and it has many times been freely charged that this was due to the influence of interested private business.

Evasion of the law. — If the influences thrown against legislation were unavailing, and laws affecting any commercial or industrial interests were passed, it often proved that the interests were too strong even for the law. Rebates, for example, were declared illegal in 1887, but for many years thereafter the practice continued almost without check. Hundreds of devices to outwit restraining laws were invented and put into effect. In all this there was disclosed an unwillingness to accept the will of the nation as expressed by its lawmaking and law-enforcing agencies — an unwillingness which did a great deal toward alienating the good will of the public from concentrated industry.

Hostility of combinations to labor organizations. — One of the advantages often claimed for the great combination is that it can deal more effectively with labor. It is true that among the great combinations labor organizations have been weakest. Controlling unlimited resources, the combinations are able to fight on indefinitely in a labor struggle. Labor leaders charge that the enormous resources of the great combinations enable them to command the courts and the military powers of the states and the nation in such ways as to suppress any struggle which labor threatens to win. Having need of thousands of workers, they can, by skillful picking of immigrants, so mix up the languages as to make very difficult the organization of the workers. Organization is difficult, too, because in the great industrial plants the unskilled common laborers are in a vast majority, and, as we have seen (p. 217), the bargaining power of the unskilled is small. At the same time the highly skilled workmen are kept quiet by disproportionately high wages.

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QUESTIONS

1. What was the theory which governed industrial practices after the Civil War? Are there any dangers in unregulated competition? Was it wise to permit individuals to take possession of the natural resources? In what ways was the American market secured by Americans? Do you see anything inconsistent in a demand for free competition and at the same time demands upon the government for protective tariffs and for aids for such projects as the building of railroads?

2. What was the cause of the panic of 1873? Could unrestricted competition have had anything to do with this? Investigate further the apparent relation between industrial activity and panics. (COMAN, *Industrial History*, chart, p. 302.)

3. What influences brought about the increased size of industrial organizations? What was the ordinary per cent of increase between 1860 and 1900? How did panics contribute to the size of industrial organizations?

4. What were the results of competition as organizations grew in size? Was such competition likely to bring high wages? Large products? Low prices? Lessened profits? Describe a railroad-rate war. Why did these wars take place after 1860 but not before? What were their effects?

5. What are pools? State the purposes of railroad pools. What are the difficulties of keeping a pool alive? What was the popular objection to them? In what ways other than for business may railroads compete? Can you see any reasons why it might have been better for the country if pooling by the railroads had been permitted?

6. What is a trust? How does it differ from a pool? Did the individuals who put their concerns in trust believe in individual freedom and unrestricted competition?

7. What is a holding company? What industrial service does a holding company perform? Can one state nullify the laws of another?

8. What is meant by industrial amalgamation? In what respects does this differ from pools, trusts, and holding companies? Illustrate the extent to which industrial control has been concentrated. In what ways can large industrial organizations serve the people better than small ones? (See VAN HISE, *Concentration and Control*.)

9. Show as well as you can from your own observation to what extent competition has disappeared.

10. In what way do labor unions and farmers' organizations illustrate the tendency to substitute coöperation for competition?

11. If there were still an abundance of free land and other unappropriated resources, would the government have intervened in industry as much as it has? What were the causes of the popular demand for such intervention?

12. Why do people distrust monopolies?

13. What practices brought popular condemnation on some large industrial combinations? Show how the transportation agencies have been used so as to favor special interests. What effects did discrimination have upon the railroads? Are railroads under any special obligation to serve all alike?

14. Describe interlocking directorates. Have you seen any reason why such directorates should have become very common? How do the functions of railroads and banks give them great power?

15. Describe the relations that have existed between railroads, and lawmakers and government officials. What economic and political evils may arise from such relationship?

16. What has often been the attitude of big business to the law?

17. Show why labor unions are often opposed to the great combinations.

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that competition is the mother of trusts.

2. Resolved that any industry that has become virtually monopolized should be taken over by the government.

3. Resolved that the Standard Oil monopoly (or any other that may be selected) has on the whole been beneficial to the country.

CHAPTER XXIII

THE REGULATION OF INDUSTRY — FARMERS' MOVEMENTS

Introduction

The period of agricultural depression

Conditions in the East

Conditions in the South

Conditions in the West

Manifestations of discontent

Effects of the frontier

The Grange and the regulation of railroads and elevators

The Greenback party

The Populist party and free silver

Coöperative movements

Monopoly in the buying of grain

Coöperative grain elevators

The Nonpartisan League

The "hog sloppers"

Nonpartisan League program

Opposition to the League

Introduction. — We have now gone far enough to understand why the people of the country watched with growing uneasiness and disfavor the movement to bring transportation agencies and great industries under all-embracing combinations. This movement, although it seemed inevitable, was accompanied by so many evils and injustices that it created for itself many enemies. Among the most bitter of these, and the earliest to attempt to restrain the revolution that was going on, were the farmers. In this chapter we shall attempt to show some of the reasons why they took steps to curb what they considered the tyrant corporation and the grasping money power.

The period of agricultural depression. — The years from 1870 to 1890 were years of depression among farmers all over the country. During the early part of the nineteenth century, it

will be remembered, their great distances from the more settled communities, their unfilled need of transportation facilities and of a sufficient market constantly handicapped the settlers of the Ohio Valley.

After the Civil War the rapid increase of farms and lands under cultivation was in itself a hindrance to the prosperity of the farmer. Between 1860 and 1890 the number of farms, the area under cultivation, and the total production increased more rapidly than the population. Prices throughout the period declined to lower and lower levels.

Conditions in the East. — In certain sections there were also local reasons for agricultural depression. In the Eastern states — New England, New York, and Pennsylvania — the farmers could not compete with the cheap produce of the West. New England was especially hard hit. The lure of the West and of the factories had called away many of the youths, leaving only the old folks upon the homestead. Throughout the Eastern states, therefore, there was a constant and very large shrinkage in the values of land, while here and there appeared in growing numbers the abandoned farm.

Conditions in the South. — In the South the problems of reconstruction delayed for many years the reestablishment of sound economic conditions. Dealing with the negroes was a hard task. Many of the freedmen, to be sure, were faithful to their old masters, and chose to remain on the plantations. Large numbers, however, unable to realize that even freemen must work, took advantage of their new liberty to stray from their old homes. Starvation threatened thousands of the blacks, and yet it was next to impossible for many planters to hire sufficient labor for their plantations. In the course of solving the labor question, many plantations were broken up into small holdings, upon which the negroes were placed as tenants.

Early attempts of the states to deal with the problem of vagabondage were frustrated by the methods of reconstruction finally adopted by the federal government. Protected by the military, unscrupulous politicians, in alliance with the negroes,

took control of the Southern state governments. An orgy of wasteful expenditure of public funds ensued; state debts were enormously increased; and a burden of heavy taxation was imposed upon an already overburdened people.

Capital for rebuilding plantations, and even for the requirements of planting a crop, was lacking. The general poverty among all classes during the years immediately following the war resulted in the establishment of a system of financing which was to weigh heavily for many years upon whites and blacks alike. Thousands of farmers became debtors for tools, machinery, animals, seed, and even food staples, giving to the merchant who supplied their needs a mortgage, or lien, upon the next year's crop.

The results were disastrous. In the first place, it has been estimated, the price of goods bought on credit was about twenty-five per cent higher than cash prices. Secondly, it was so much easier to go into debt than to deny one's self in order to pay cash that thriftless habits were inculcated. Furthermore, it was impossible to tell in advance whether or not a crop would pay for the supplies which had been bought. Owing to expensive living, poor crops, or a decline in the price of cotton, a farmer would often find himself with part of his last year's bills unpaid, at a time when he wished to make new purchases on credit for the coming year.

For some years after the war men were encouraged to go in debt for supplies by the high price of cotton. Then a decline set in which continued for over thirty years, as shown by the following table of average prices for middling cotton for five-year periods:

YEARS	AVERAGE PRICE PER POUND IN CENTS	YEARS	AVERAGE PRICE PER POUND IN CENTS
1865-69	42.40	1880-84	11.57
1870-74	20.24	1885-89	10.12
1875-79	12.46	1890-94	8.57

The farmers, therefore, gradually fell into the hands of their "merchandisers." Having once gone in debt to a merchant, it became impossible for a man to trade with anyone else, be-

cause no other merchant would supply one whose crop was already mortgaged. The debtor was, therefore, deprived of the advantage of competitive prices.

Furthermore, the merchant was in a position to dictate what the farmer should raise. He naturally named cotton, because cotton was the surest money crop, while the raising of cereals, vegetables, and animals would tend to make the farmer independent of the merchant for supplies. The one-crop system was thus perpetuated, the land was impoverished, and the possibility of paying debts was, therefore, rendered still more remote. Under such circumstances it was not difficult to recruit Southern farmers in radical movements.

Conditions in the West. — Although conditions in New England and the South were worse than in other parts of the country, yet the strongest manifestations of discontent came from the Upper Mississippi and Missouri valleys. This was especially true of the states west of the Mississippi and farthest from the markets.

The problem of marketing produce from these regions continued to be most irritating. The farmers believed that the transportation agencies were not giving them a square deal. For a few years after the war railroad rates from the West were so high that a large part of the value of farm produce was consumed in getting it to market. Rates soon began to decline, however, and continued downward until this grievance became imaginary rather than real.

The railroads had been made for some time the pets of the national and state governments, and, like spoiled children, failed to grasp their true functions and their proper relations to the community. The managements were too often lacking in courtesy. They had not learned the value of being polite and obliging. By their arrogance and their defiance of public opinion, they unnecessarily laid up for themselves much trouble for the future.

Railroads also were suspected of collusion with other marketing agencies in defrauding shippers of a part of the value of their

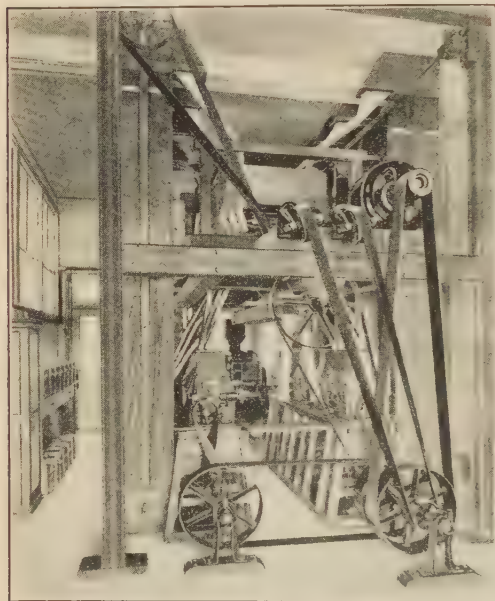
produce. Grain elevators were manipulated to the disadvantage of the Western producers. Soon after 1885 certain large syndicates secured control of a majority of the elevators along the railroad lines. By agreements with the railroads these syndicates compelled the farmers to sell to them at their prices or not at all. At the great primary markets commission merchants and jobbers likewise combined to take an undue profit from their dealings in the produce of the farm. These unsatisfactory conditions of transportation and marketing kept the farmers of the West in a constant state of irritation. When they bought anything, as they believed, they paid what the seller demanded; when they sold, they had to take what the buyer offered. Moreover, the more they raised, the lower went the prices.

In 1884 the greatest wheat crop on record up to that time had been produced. Yet the producers received for it less, with one exception, than for that of any year previous as far back as 1876, when the production was but little over half what it was in 1884. Figures for a series of years are even more convincing. From 1880 to 1884 the average value of cattle other than milch cows was about twenty dollars per head. Between 1890 and 1894 it was fifteen dollars. In 1889 there were raised six hundred and twenty million more bushels of corn than in 1890, yet the receipts were one hundred and fifty million dollars less. The following table shows how the farmer's wheat income shrank from 1866 to 1895:

FIVE-YEAR PERIOD	BUSHELs RAISED	VALUE ON FARM
1866-1870	1,084,000,000	\$1,205,000,000
1871-1875	1,362,000,000	1,370,000,000
1876-1880	2,020,000,000	1,962,000,000
1881-1885	2,178,000,000	1,892,000,000
1886-1890	2,219,000,000	1,687,000,000
1891-1895	2,451,000,000	1,513,000,000

There were mortgages on many of the farms of the West, although this was a condition generally true in most of the other agricultural regions as well. In large measure the money bor-

rowed came from Eastern capitalists and bankers. A mortgage on a farm does not necessarily mean lack of prosperity any more than does the running of a store on borrowed capital.



Courtesy of the Pillsbury Flour Mills Company

COMPLETE MINIATURE FLOUR MILL USED FOR TESTING WHEAT SAMPLES IN THE LABORATORY OF A FLOUR-MILLING COMPANY

This attention to details is another illustration of what concentrated capital can do. There are few great manufacturing concerns without their laboratories where scientists constantly work out new principles which improve the quality of the output and reduce the costs.

Mortgages, indeed, often increase in numbers during times of great prosperity. Nevertheless, the farmers of the West came more and more to believe that there was a conspiracy of Eastern bankers and capitalists with the railroads to prevent their getting the rewards of their labor.

Another cause of discontent arose from the over-enthusiasm of the migrating farmers themselves. Many thousands in their eagerness to get lands had gone beyond the bounds of the humid area

into the semiarid. In these dry regions there occasionally come one, two, and even three rainy years in succession when the crops are abundant. The result would be a land boom, often engineered by speculators, followed by a rush of settlers to take up claims. Town sites were sometimes laid out and a "city" started, all within a few months. Then the dry years

would return, and soon the "city" and the surrounding farms would all be deserted. The prairie schooners would again start on their journeyings, this time eastward bound, leaving behind a desert crisp and parched. Some states actually declined in population as a result of the counter-migrations which followed these encroachments upon the desert. Between 1890 and 1895 Kansas decreased in population by about one hundred thousand people, and in the western counties there was a loss of over two hundred thousand.

As if drought were not enough, at intervals of a few years would come the grasshoppers. An Englishman who farmed in Kansas during the 'seventies thus describes one of these calamitous visitations:

"They came on gradually like a fall of snow. We first saw a glittering cloud high in the sky and all sparkling in the sun from which they fell one or two at a time. At first they came down so slowly that the fowls could clear them up, but presently they began to fall in earnest, and then nothing could check them. They lighted on houses, people, animals, fences, crops, covering everything, while the ground was strewn several inches thick, so that it was impossible to walk about without killing dozens at each step. . . . In the morning the corn was waving in all its beauty . . . a splendid green, and so high and dense that a man riding through it on horseback would not be seen; in the evening nothing remained but the bare, upright stalks. . . . Flowers, leaves, silk, ears, all had vanished. . . . They cleared off all the apples, peaches, and grapes, of which fruits we had a splendid show; but not a single one of either escaped."¹

Manifestations of discontent: *The effects of the frontier.*—As a rule, the farming classes form one of the conservative forces of any country. The agriculturist will cling to old ideas and old methods longer than the people of the cities. It has remained for the American farmer of the Middle and Far West to shatter this tradition. Since the close of the Civil War it has been these regions from which many radical movements have

¹ Ebbutt, Percy G., *Emigrant Life in Kansas*, p. 127.

sprung. To a considerable degree the conditions just outlined were responsible for this fact. In addition, the frontier always has been more impatient with ancient customs and restraints. Its population was made up in large measure of men and women who had to break with old traditions in order to be on the frontier at all. It was the man of venturesome spirit who most often left the old home for the unknown backwoods and prairies.

Thus we find between the years 1865 and 1895 numerous reform movements starting among the farmers of the West. These movements had for their main purposes (1) the regulation of railroads and of other marketing agencies, and (2) the improvement of the condition of the debtor classes through reforms in currency, banking, and speculation.

The Grange and the regulation of railroads and elevators. — In 1867 O. H. Kelly, once a farmer, but at the time a clerk in the Post Office Department at Washington, with six clerks from other bureaus or departments, formed the National Grange of the Patrons of Husbandry. The object of the Grange was to organize the farmers of the country in their own interests. This organization was to be secret and was to consist of local granges bound together in a national association. After several years of struggle, the order began to grow rapidly, and by 1875 there were over twenty thousand local granges with seven hundred and fifty thousand members. After that it began to decline, and by 1880 its membership is estimated to have been not over one hundred and fifty thousand. It has survived in many states to this day, but its early aggressiveness has never returned.

One of the main purposes of the Grange was to combat monopolies and discrimination. Although it disclaimed any political motives, nevertheless, between 1870 and 1875 farmers' legislatures were elected in numerous states. In Iowa, Illinois, Wisconsin, and Minnesota they at once passed laws to regulate railroads and warehouses — the so-called Granger Laws. The main features of these laws were the fixing of passenger and freight rates, and the prohibition of a larger per-mile charge for

a short than for a long haul. The rates were established either by the law, or by a commission established by the law. Provision was also made for the fixing of rates of storage in elevators and for preventing discriminations in services rendered by them.

Most of the Granger legislation did not last long. Some of the laws were so severe that the railroads insisted they could not operate under them. The people soon became frightened at what they had done, owing in large measure to a careful campaign of "education" paid for by the railroads. By this propaganda people's fears were aroused lest railroad building would cease and the states be ruined. For these reasons most of the rate-fixing laws were repealed. Certain results, however, were accomplished. In the first place, railroad commissions were established in many states that had not had them before, and the example was gradually followed by others. Secondly, the doctrine had been introduced that the railroads were public servants instead of private concerns that could tell the public to mind its own business. Moreover, since the inadequacy of state regulation had been proved, the way was cleared for national control. This began soon after the decline of the Grange set in.

The Greenback party. — While the Grangers had thus aligned themselves on the side of radical railroad legislation, the Western agriculturists were no less ready to follow other unorthodox policies. When the time for the redemption of the greenbacks began to approach (p. 452), they threw themselves in large numbers into opposition to this measure. It was, they claimed, a device to enrich further the bankers and speculators of the East, the holders of the mortgages on the farmers' homes. They demanded that the government keep the greenbacks in circulation and print more. On this issue the Greenback party came into being during 1876 and lasted through several presidential campaigns. The backbone of the party, which we shall consider in another connection, was the farmers of the West, and debtors generally.

The Populist party and free silver. — The agitation continued during much of the 'nineties. In 1891 the Populist party was organized and nominated a candidate for president in 1892. Among the planks in the party platform were demands (1) for the abolition of national banks and the substitution in their place of sub-treasuries which should lend money at low rates on the security of land or farm produce, (2) the free coinage of silver, (3) government ownership of railroads, (4) prohibition of alien ownership of land, and (5) a federal income tax.

A dark prospect for the nation was drawn in the preamble of the platform. "We meet," it said, "in the midst of a nation brought to the verge of moral, political, and material ruin. Corruption dominates the ballot box, the Legislatures, the Congress, and touches even the ermine of the bench. The people are demoralized. . . . The newspapers are subsidized or muzzled, public opinion silenced, business prostrated, our homes covered with mortgages, labor impoverished, and the land concentrating in the hands of the capitalists." By such a system, it went on to say, two great classes were being bred — "tramps and millionaires."¹ This platform, with its preamble, shows the state of mind to which a large and intelligent part of the population had been brought by the various causes described in the preceding pages.

The party did not last long. In 1896 the free-silver plank was taken over by the Democratic party, with which the Populists were merged. One final observation should be made regarding the farmers' movements. Oftentimes the statements made by the leaders seemed, or were made to seem, wild and extravagant. Their claims were met by ridicule and laughter. Yet the sober thought of the nation has since been applied to the study of remedies for many of the economic and political conditions which the farmers so frequently denounced, but the existence of which their opponents so noisily denied.

Coöperative movements. — Farmers' organizations, however, have not all had a political tendency. Within the last

¹ Watson, Thomas E., *People's Party Campaign Book*, p. 123.

twenty-five years some promising coöperative movements have grown up. This has largely been made possible by the passing of the frontier and of the isolation of the farmer. The motive of some of the strongest movements, however, has been the desire to overcome disadvantageous and unfair marketing conditions, the same conditions which were responsible for the Granger movement and the forming of the Populist party.

Monopoly in the buying of grain. — One of the strong coöperative associations grew out of the conditions surrounding the marketing of grain. Previous to 1885 grain had been bought at the stations either by small, independent elevator companies, some of them controlled by the farmers, or by occasional buyers called "scoopers." The latter had no elevators, but scooped the grain directly from the wagons to the cars. There was, accordingly, a keen competition between these two buyers, and the farmers reaped the benefit.

About 1885, however, a new element appeared in the form of line elevator companies. This was a time when combination, with a view to monopoly, was making notable headway in all industries. The line elevator companies had ample capital and built or bought large numbers of elevators along the lines of railroads running through the grain regions. Through their influence and direct connection with the railroads, cars were refused to the scoopers. If one succeeded in getting a car, commission merchants were compelled to refuse to handle the grain. By paying higher than market prices wherever there was competition, the line companies put the independent elevators out of business, or else forced them into the combination.

When, by such methods, all opposition had been crushed, the combination then turned on the farmer. The latter had not only to accept the prices offered, but also the grading of the grain made by the elevator company. Northern wheat, for example, is graded as numbers one, two, three, etc., the price varying with the quality. The farmer suffered because the wheat that was rightfully number one would be graded number two and so on down. The grain would be stored in the great elevators at the

primary markets until the companies were ready to sell it to the millers. Strange to relate, when this time arrived, many more bushels of number one wheat would come forth from the storage plant than had gone into it, many more likewise of number two, but far fewer of the lower grades.

Coöperative grain elevators. — In 1889 a group of farmers in a small Iowa village, aroused by the methods of the line companies, organized an independent elevator company. Many such experiments had been tried before, but had failed because of overbidding by the line companies. In order to meet this difficulty, all the members of the new association agreed to pay into the treasury a commission of one-half cent per bushel for every bushel which they sold, no matter whether the sale was made to their own or to the line company. Thus the coöperative company managed to live, even when its members were selling their wheat to its rival.

After ten years of successful operation the idea began to spread. Then the line companies began to be worried and made use of every device known to them and to their lawyers to drive the farmers out of business. They tried in vain to have the payment of the one-half cent commission declared illegal. They threatened the commission merchants with a boycott if they patronized the coöperative elevators. During the years 1901 and 1902 there were but two commission houses in Chicago that dared to defy this threat. These two, however, sent their agents out and helped the farmers organize new associations. By 1904 so numerous had they become that state organizations were formed in Iowa and Illinois. By 1905 their numbers were so great that other commission houses began to bid for their patronage. Eight years later there were nearly eighteen hundred organizations throughout the Middle and Western grain states.

The Nonpartisan League. — Although the coöperative elevator movement brought a measure of satisfaction, it could not meet the whole problem. Recently a new movement, more comprehensive in its program, but still having as its original

motive the remedying of unfair marketing methods, has been started by Western farmers. This movement — the Non-partisan League — began in North Dakota early in 1915, and by the fall of 1916 had grown strong enough to elect all the state officers except the treasurer, eighty-one out of one hundred and thirteen members of the assembly, eighteen out of twenty-five state senators, and all three judges of the supreme court.

The "hog sloppers." — The work of getting members was facilitated by an indignant state of mind which pervaded the whole state. Although North Dakota is a farmers' state with no large cities, the farmers had never been able to secure from the lawmakers legislation which covered their demands. State laws discouraged farmers' coöperative elevators. The farmers had long been demanding state-owned terminal elevators and mills, so that their wheat should not leave the state, and so that they might be rid of what they believed to be the oppressive autocracy of the Minneapolis millers and the dishonest grading of wheat by the storage agencies. A report was spread through the state that a delegation of farmers, on bringing their demands before the state legislature, had been told by one of the leaders, "Go home and slop your hogs; the farmer has no business in politics; leave the politics to us." This incident, cleverly exploited, was of great assistance in rapidly covering the state with League organizations. The slogan of the organizers became, "Fill the state offices and the legislature with hog sloppers."

Nonpartisan League program. — For about five years the League had political control of North Dakota, and much of its program was put through. It also spread into many of the surrounding states, being especially strong in Minnesota, Idaho, Nebraska, and Colorado. The purposes of the League varied with the needs of the community. In North Dakota the question was grain; in Idaho, lumber and water power; in Colorado, beet sugar, irrigation, and the holding of land out of use. Everywhere, however, there was the basic idea of the control of

marketing facilities through state action. As time went by the program broadened, so as to include state control or ownership of marketing facilities, banks, and natural resources, such as coal, iron, and water power.

Opposition to the League. — It is needless to say that the League was bitterly fought by all the interests concerned. It was fought by combinations of the old parties in order to defeat its candidates at the polls. Attempts were made to connect the League with the I. W. W., Bolshevism, and pro-Germanism. No stone was left unturned to discredit it in the eyes of all people that were not ultra-radical. Owing partly to the attacks of its enemies, and partly to bad leadership, the program put into effect in North Dakota did not work out just as the farmers had hoped it would. The state-run bank got into difficulties, the public debt grew, and the state-owned flour mill did not bring the hoped-for wheat-growers' Utopia. By the fall of 1921, therefore, a reaction, chiefly against the bad leadership, had taken place in the minds of many of the people. The question of the recall of the Nonpartisan governor was put on the ballot in the state elections, and the recall was voted by a large majority. At the same time, however, by an even larger majority the people refused to give up their state-controlled bank and their state-owned elevators and mills.

Whatever one's feelings may be as to the Nonpartisan League, it is well to remember that the movement started and had its greatest spread among substantial American farmers. Its members are largely owners of property, and many of them are wealthy. They are themselves capitalists. It is inconceivable that they wish to overturn American institutions. By 1925 the League as an organization had practically disappeared. Its spirit, however, persists through its control of the Republican party in the League states of the Northwest. Its activities are thus carried on in Congress through the "agricultural bloc" in the Senate and the House. These members still hold the balance of power in the Senate and are able to hinder or prevent legislation even while unable to put through a program of their own.

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QUESTIONS

1. From what handicaps did farmers suffer during much of the nineteenth century?

2. What were the agricultural conditions in the Northeast and the South after the war?

3. Summarize briefly the causes of the discontent of Western farmers. Why were the farmers angry at the railroads? What purpose would the railroads have in favoring elevator companies and commission houses at the expense of the farmers? What was the course of prices between 1865 and 1895? What were the causes of the change? What does a large number of farm mortgages indicate as to the condition of the farmers? What new conditions regarding migration were the Western farmers confronting? What was really at the bottom of the farmers' troubles?

4. Why are farmers usually conservative? In what way did frontier conditions affect the traditional conservatism of farmers?

5. Describe the origin, constitution, and growth of the National Grange. What were the Granger Laws? Why were these laws not permanent? Did any permanent results come from the Granger movement? Are railroads under any greater obligations to serve the public well than manufacturing establishments are?

6. What was the position of the farmers on the questions of paper money and free silver? What were the reasons for their attitude on these questions? Were the opinions of the farmers as radical as they were represented?

7. Why was coöperation among farmers impossible as long as there was an open frontier? Trace the developments which took place in the methods of marketing grain between 1865 and 1890. What would be the purpose of monopolizing the facilities for handling grain? In what way did this monopoly injure the farmers? Describe the development of the coöperative grain-elevator system. Would it be practicable for the coöperative movement to be extended so that the farmers might control the entire process of grain marketing? (See WELD, L. D. H., *The Marketing of Farm Products*.)

8. Describe the growth of the Nonpartisan League. What were the causes of its being organized? What were its purposes? Judging by the past, is it safe to say that the ideas of the League are unsound or unpatriotic? Should there be any objection to letting the farmers of a state control their own affairs? Who would be most likely to object?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that it would be to the advantage of both producer and consumer if the government owned the grain-storage facilities in the primary grain centers and acted as agent for the owners of the grain in the disposal of the product.

2. Resolved that in 1875 the farmers of the East (or of the South) had greater cause of complaint than the farmers of the Middle West.

3. Resolved that it would be to the advantage of both producer and consumer if a program such as advocated by the Nonpartisan League were put into effect.

CHAPTER XXIV

FEDERAL REGULATION OF INDUSTRY

- Preliminaries to federal regulation
 - Ineffectiveness of the early legislation
 - The Senate Report of 1886
- The Interstate Commerce Commission
- The Interstate Commerce Law from 1887 to 1903
- The Sherman Antitrust Law
- The campaign of publicity
- The Bureau of Corporations
- Supreme Court decisions
 - The Northern Securities case
 - The Standard Oil and Tobacco cases
- The results of publicity
- The Elkins, the Hepburn, and the Mann-Elkins acts
- The results of railroad legislation
- The Esch-Cummins Act
 - Financial reestablishment
 - The railroad labor problem
 - The powers of the Interstate Commerce Commission
 - The railroads as public servants
- Antitrust regulation, 1912 to 1920
- The Federal Trade Commission
 - The prevention of "unfair" competition
 - Investigation of violations of the law
 - Squaring business methods with the law
 - The publication of information
- The Clayton Antitrust Act
- Illegal practices under the Clayton Act
 - Discriminations in price
 - The "tying" agreement
 - Intercompany stock control
 - Interlocking bank directorates
 - Restrictions on common carriers
- The exceptions in the Clayton Act
- The Clayton Act an attempt to restore competition

Preliminaries to federal regulation. — The Granger Laws, the Greenback, Free Silver, and Populist parties were but temporary outbursts coming from a minority of the people. At the same time, however, a large majority of the people were likewise coming to the conclusion that something must be done to regulate, control, or prohibit the activities of the transportation agencies and the industrial combinations.

Ineffectiveness of the early legislation. — The beginnings were made with the railroads. Certain states had before 1880 established railroad commissions, which were given, however, but little power. The state Granger Laws had been unsuccessful. Inasmuch as state laws reach no farther than state boundaries, it finally came to be seen that the only hope of an effective control of the railroads must be through federal laws.

The Senate Report of 1886. — In 1885 the United States Senate appointed a committee to investigate railroad discrimination. After many months of study a report was issued. The effect of railroad discriminations, said the report, "has been to build up the strong at the expense of the weak, to give the large dealer an advantage over the small trader, to make capital count for more than individual credit and enterprise, to concentrate business at great business centers, to necessitate combinations and aggregations of capital, to foster monopoly, to encourage the growth and extend the influence of corporate power, and to throw the control of the commerce of the country more and more into the hands of the few." It further said: "It has come to be understood among business men that the published tariffs are made for the small shippers, and those unsophisticated enough to pay the established rates; that those who can control the largest amounts of business will be allowed the lowest rates; and that those who, even without this advantage, can get on the 'inside' through the friendship of the officials or by any other means, can at least secure valuable concessions."¹

As a summary of its findings the following points were made: (1) that unreasonable rates were exacted between noncompet-

¹ Sen. Rep. 46, 49th Cong., 1st Sess., 1886. Part 1.

ing points, (2) that local rates were unreasonably high as compared with through rates, (3) that discriminations were made in favor of certain individuals and certain places at the expense of others, (4) that rebates, drawbacks, and concessions to favored shippers were common, (5) that passes were lavishly distributed to privileged classes, and (6) that capitalization was inflated and managements were wasteful.

The Interstate Commerce Commission. — As a result of this report the Interstate Commerce Act was passed in 1887. The act established the Interstate Commerce Commission of five members appointed by the President. This commission was empowered to hear complaints about discriminations and to make public unfair or unreasonable rates. From its decisions appeal could be made to the federal courts. The law forbade pooling, and discriminations between persons, places, or commodities; forbade passes except to employees; and required the publication of rate schedules. The penalty for breaking the law was a fine of not over five thousand dollars for each offense.

The Interstate Commerce Law from 1887 to 1903. — The first Interstate Commerce Law failed to prevent discriminations. The Commission had little power to enforce its decisions and to secure evidence; penalties were inadequate; and railroads proved skillful in evasion of the law.

The Commission was handicapped because it had been given no authority to begin proceedings against what it might believe to be violations of the law. It could only sit back and wait for the injured party to enter a complaint. As such complaints were few, owing to the trouble and cost of bringing them, the effectiveness of the law was greatly lessened.

The enforcement of the law was left to the courts. Within a few years Supreme Court decisions had taken away most of the powers which were supposed to have been given to the Commission. For example, the power of the Commission to get evidence was destroyed in 1892 by a decision that no railroad official could be compelled to testify as to discriminations, inasmuch as he might by so doing incriminate himself. Later the Court,

held that the Commission had no authority to establish rates. This point had not been made clear in the law, and was a debatable question until an order of the Commission fixing certain maximum rates was reversed by the Supreme Court in 1896. By several other decisions the Commission was gradually weakened. Up to 1906 ninety per cent of the orders of the Commission that had come before the Supreme Court had been overruled. The courts also decided that the penalties of the law could be exacted only from individuals. The railroad corporations could not be fined, although it was often easy to prove they had broken the law, even when the individual who ordered or carried out the act could not be detected.

The railroads, moreover, worked out schemes of evading the law. Many a rebate, dressed up to look like something else, was paid. When, for example, the roads paid for the use of oil-tank or refrigerator cars more than the service of the cars was worth, they were really paying rebates in the guise of rent to the owners of the cars. The roads also took advantage of the fact that much of their traffic was entirely within the borders of a state, that is, it was not interstate, and hence did not come under the interstate law. For this reason, instead of giving a single pass, good on any part of a line, a road would give a separate pass for each state through which it ran. Rebates were also openly given on such traffic.

As a consequence of the defects in the law and the skill of the roads in evasion, a railroad manager was able to testify to the Commission in 1890: "The situation in the West is so bad that it could hardly be worse. . . . Rates are absolutely demoralized. . . . The management is dishonest on all sides, and there is not a road in the country that can be accused of living up to the Interstate Law."¹

The Sherman Antitrust Law. — In 1890 the Sherman Antitrust Law, aimed directly at industrial combinations, was passed. It made illegal "every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce

¹ Parsons, Frank, *Heart of the Railroad Problem*, p. 55.

among the several states," and with foreign nations. It forbade monopolies or attempts at monopoly of interstate or foreign commerce. It is to be noted that Congress did not attempt to define just what would constitute a conspiracy, contract, or combination in restraint of trade. It purposely left this task to the courts as the cases should arise.

For a long time — nearly fifteen years — the Sherman Act was almost a dead letter. It was worded vaguely enough so that none knew how far it reached. There was, therefore, to be required much interpretation by the courts before it should become fairly clear to anyone. During the decade of the 'nineties a small number of cases were tried under the act. Few of them attracted great interest, and it was not until the next decade that the real powers, and also the imperfections, of the measure were brought out clearly.

The campaign of publicity. — From 1896 to 1911 the people of the country had the financial and business methods of the great industries presented to them in more forcible and striking ways than ever before. It is safe to say that more reading along such lines was done than had been done throughout the previous century. Many were first aroused by the denunciations of capital by William J. Bryan in his rear-platform political campaigns. These were soon followed by exposures of the "trusts" in popular magazines. For a few years the "best sellers" among such periodicals were those which presented most luridly the greed of business organizations. The magazines were ably seconded by the efforts of certain widely-read daily papers. It was the period of the "muckraker," and of criticism which was chiefly destructive and generally one-sided and distorted. Books of judicial temper, such as Miss Tarbell's *History of the Standard Oil*, likewise began to appear. Gradually the volume of articles and monographs published by the universities and by such learned societies as the American Academy of Political and Social Science on current social and economic subjects became greater and greater. In 1901 and 1902 appeared the great report in nineteen volumes of the United

States Industrial Commission. In this report we find an enlightening survey of the whole economic and industrial field as affecting the United States. From about this time, also, there was an endless list of investigations made by special committees of state legislatures, as well as by those of both houses of Congress.

The Bureau of Corporations. — Congress, pursuing still further the method of publicity, in 1903 established the federal Department of Commerce and Labor. Within this department was set up the Bureau of Corporations, headed by a Commissioner. The Commissioner was authorized "to make . . . diligent investigation into the organization, conduct, and management of the business of any corporation, joint stock company, or corporate combination engaged in commerce among the several states and with foreign nations . . . and to gather such information and data as will enable the President of the United States to make recommendations to Congress for legislation for the regulation of such commerce." The Commissioner was given power to summon witnesses, to compel the production of documents and accounts, and to publish his findings.

Between the date of its establishment and the year 1914, when it was superseded by a new commission (p. 437), the Bureau made numerous important investigations of the methods employed by some of the greatest business organizations. Among these were included petroleum, steel, tobacco, beef, lumber, sugar-refining, and water-power interests. It should be noted that the Bureau had no restraining power. Its work was merely that of finding out the facts. Its importance lay in throwing open to the view of all just what was going on, and in furnishing data upon which any needed legislation might be made.

Supreme Court decisions: *The Northern Securities case.* — During the administration of President Roosevelt, the federal Department of Justice became very active in prosecuting alleged violators of the Sherman Law, and under President Taft

this activity greatly increased. Numerous Supreme Court decisions rendered between 1904 and 1913 did much to demonstrate the power of the law. The first of these — the North-



Courtesy of Armour and Company

A BY-PRODUCT OF THE PACKING INDUSTRY: CURLLED-HAIR WORKS IN A PACKING PLANT

Whatever one's opinion may be as to the methods of the great corporations, it must in fairness be admitted that they have done much to conserve resources. Unlimited capital resources make possible constant investigation having in view the elimination of waste. This picture and the one on the opposite page show two by-products which capital extracts from the carcasses of animals. A statement by one large packing company mentions sixty-eight by-products of the concern.

ern Securities case — was made in 1904. In this case, for the first time, it was held that the Sherman Law applied to the railroads as well as to other industrial enterprises, although the defendants based much of their defense on the plea that the law did not apply to them, as they were under the regulation

of the Interstate Commerce Commission. The case concerned the attempt to merge under one management two parallel and competing roads — the Northern Pacific and the Great Northern — through the formation of the Northern Securities Corporation to hold the stocks of both roads. The Court dissolved the merger, and put an end for the time being to railroad consoli-



Courtesy of Armour and Company

MUSIC STRINGS FOR VIOLINS, ETC., MADE FROM INTESTINES OF THE SHEEP

dation, which had been going on rapidly for a number of years. Incidentally, it was a severe blow to the holding company as a means of securing a monopoly.

The Standard Oil and Tobacco cases. — Two cases, begun in 1906 and 1907, were decided in 1911. These were the suits of the government to dissolve the Standard Oil and the American Tobacco companies. In both cases the Supreme Court decided against the companies, and ordered them dissolved

into their original parts. The importance of these decisions lay not in the dissolution of the companies — for the harmony and coöperation of their various parts were not really much affected by the Court's action — but rather in the interpretation of the law upon which the decision was reached. This interpretation was the so-called "rule of reason." Under this rule the Court held that the Sherman Law was not intended to prevent all combinations, contracts, and the like that were in restraint of trade; but that it applied only to those that exercised an "undue," or unreasonable restraint. The decision was, in effect, a condemnation of unfair methods of doing business. It was because the Tobacco and the Standard Oil companies had not, in the view of the Court, played a fair game that they met with condemnation. While the rule of reason was at variance with some decisions previously rendered by the same Court, it seems to have been accepted as sound doctrine, and other decisions since rendered have been in accord with it.

The results of publicity. — One of the most important effects of publicity has been the naturally restraining influence of published facts. Many men will do things in secret which they would shrink from doing if they thought their acts were to be known. It is claimed, for example, that some bad practices have stopped merely because the Bureau of Corporations had the facts in its possession.

Much new legislation has also resulted from increased knowledge and experience. Among the most important federal laws passed since the opening of the century have been the Elkins, the Hepburn, the Mann-Elkins, and the Esch-Cummins acts strengthening the Interstate Commerce Law; the act establishing the Federal Trade Commission; the Federal Reserve Banking Act (p. 459); and the Clayton Antitrust Act.

The Elkins, the Hepburn, and the Mann-Elkins acts. — Some of the defects of the Interstate Commerce Act were remedied by the Elkins Act, passed in 1903, and the Hepburn Act, passed in 1906. As we have already seen, the law penalized

only the individual, leaving the corporation untouched. The Elkins Act imposed a fine on railroad corporations for charging, and on shippers for paying, anything but the published rates. It gave the Commission power to summon witnesses and compel the production of necessary papers and documents. A very important provision also released from criminal liability any witness who should give testimony that would implicate himself. Although this might permit a few guilty to escape, it made the concealment of facts less easy, and the discovery of the prominent culprits more certain.

The most important provision of the Hepburn Act was the one that gave the Commerce Commission authority to name reasonable maximum rates on common carriers, although such an order might be set aside by the Circuit Court. The Commission was also given control over private cars, such as tank, refrigerator, and sleeping cars; over switching and other terminal charges; and over the pipe lines. The law likewise enabled the Commission to arrange for uniform methods of railroad accounting. Under the so-called "commodities clause," railroads were forbidden to transport in interstate commerce any articles mined or manufactured by themselves, except timber and timber products.

The Mann-Elkins Act, passed in 1910, further strengthened the Commerce Commission by empowering it to act on its own initiative in the regulation of rates, instead of only upon complaints made by shippers, as the law had hitherto provided. The Commission was also given the power to suspend proposed increases until after investigation as to their reasonableness had been made, and to condemn rates that were found to be unreasonable. In this act, also, railroads were effectively forbidden to charge more for a short haul than for a long haul over the same line.

Results of railroad legislation. — After the passage of these laws there is no doubt of the greater effectiveness of the Commission. Up to the time when the United States entered the war and took over the railroads, many of the most flagrant

abuses in the way of special rates to favored shippers, discrimination against particular places, and the giving of passes had been abated. Indeed, the railroads complained that the Commission, disregarding the needs of the roads, had kept rates down when the rising costs of materials and labor made greater revenues necessary. It is true that many of the strongest lines failed to keep up with the demands made upon them. They could not even borrow money, because investors hesitated to put capital into enterprises which were forbidden by law to increase their revenues as their expenditures grew larger. Since the beginning of the century many systems have become bankrupt, some of them once considered among the most substantial investments in the country. Their troubles, however, were due to mismanagement and questionable or illegal practices quite as much as to the restrictions of the law.

That the railroad system was going to pieces became evident when it was taxed with the burdens of the Great War. It was soon found necessary for the government to assume control in order to secure better coöperation of the several parts of the transportation system. A considerable increase in rates was granted the railroads; they were aided by vast funds loaned by the government; and they were guaranteed a fixed return from the public treasury. To keep the roads going, the wages of labor in all departments were largely increased, and a set of rules, intricate, but uniform for the whole country, was adopted, governing wages, hours, and general conditions of labor. Having an enormous work to do in an extremely short time, the government's management of the railroads entailed huge costs and much waste. This was inevitable. The main point, however, was that it got the work done.

The Esch-Cummins Act. — Early in 1920 Congress passed the Esch-Cummins Act, which provided that on March 1, 1920, the railroads should be restored to private operation. This act, which has been called "the first constructive railroad legislation" since the land grants of the 'sixties, deals mainly with three aspects of the railroad problem.

Financial reestablishment. — In the first place, the act attempts to meet the financial problem of the roads. In order to give the new management a chance to get started, the law guaranteed to the roads for six months the same returns which they had been paid under government operation. A fund of three hundred million dollars was provided for, which the government was to lend the roads for their immediate needs.

The Interstate Commerce Commission, moreover, was directed so to increase rates as to give the roads until March 1, 1922, a maximum return equal to six per cent of the aggregate value of all the roads. As such a general advance in rates, received equally by the poor and the prosperous roads, would result in the latter's earning far above six per cent, the law further provided that only half the earnings in excess of six per cent should be retained by the roads. The other half is to be handed over to the government to be used as a fund for the aid of roads in distress. After March 1, 1922, the Interstate Commerce Commission shall determine what rates will bring in a "fair return" on the aggregate value of the whole railroad system, the provisions as to the excess profits remaining the same. In accordance with this provision the Interstate Commerce Commission authorized a flat increase of twenty-five per cent in freight rates, and twenty per cent in passenger rates.

Indirectly concerned with the question of finance, was that of coöperation among the roads. Pooling, which, as we know, the federal and state lawmakers had for forty years resolutely forbidden, now became legal. The act went even farther, and authorized the voluntary consolidation of competing groups of railroads, so that the transportation systems of different sections might be run as units. The purposes of these clauses are evident. First, competition among railroads was recognized as a thing of the past. Secondly, through coöperation it was believed that greater economies and efficiency could be secured by the common use of equipment and terminals, and the more economical routing of freight. Thirdly, consolidation was ex-

pected to resuscitate the weak roads and finally, perhaps, make them self-supporting.

The railroad labor problem. — The law also provided machinery to settle labor disputes. The separate systems and their employees were permitted, if agreeable, to establish boards of labor adjustment to settle minor grievances, rules, or working conditions. The President was authorized to appoint a general labor board of nine members, three to represent the public, three the employees, and three the railroads. This board has for its chief duty the hearing of questions of wages. Five members, of whom one must represent the public, may render a decision. Such decision, however, is not binding on either party, but it was hoped that public opinion would supply the needed compulsory force.¹

Powers of the Interstate Commerce Commission. — The act conferred further great powers upon the Interstate Commerce Commission. In addition to those already noted, it gave to the Commission supervision of the excess earnings fund. The Commission was also given the power (1) to control the issue of railroad securities, (2) to change intrastate rates when they discriminate against interstate or foreign commerce, (3) to determine whether new roads or extensions are necessary, (4) to regulate the division of receipts for freight hauled over more than one line, (5) to require the common use of equipment and terminals, (6) to regulate car service and compel purchases of

¹ The following are among the more important activities of the Interstate Commerce Commission and Railway Labor Board up to December, 1921: (1) The submission by the Interstate Commerce Commission of a tentative plan for the consolidation of all the great roads into nineteen systems (September 28, 1921); (2) an order by the Labor Board of a general increase of twenty-five per cent in the wages of railroad laborers (July, 1920); (3) an order by the Labor Board of a twelve per cent reduction of wages effective July 1, 1921; (4) hearings during the fall of 1921 of railroad executives and labor leaders relative to further wage reductions, changes in the working rules established by the government during the Great War, and an order for a general strike to be effective October 30, 1921. The strike did not take place, owing partly to the persuasions of the Board, partly to the weakness of the laborers' case, but most of all to public opinion, which this time rose to the expectations of the lawmakers and cast its weight against such a catastrophe. Soon afterwards the railroads outside of New England reduced rates on farm products ten per cent. This was probably the result of a suggestion of the Board that the roads reduce rates before pressing for further reductions in wages.

equipment, (7) to issue priority orders, and (8) to fix minimum rates.

The railroads as public servants. — Throughout this law may be seen a more complete recognition than ever before of the idea that the railroads must be made to serve all the public. Competition was eliminated for the public good. Profits were made of secondary importance, and were to be permitted solely for the purpose of making the credit of the railroads strong, so that they might not be handicapped in improving their service for the public good. A railroad must no longer be permitted to offer but indifferent service merely because it is poverty-stricken. States were further limited in their power to interfere for their own local interests with the income of the railroads. An attempt was made even to settle the question of the railroad-labor strike. Voice was given to the growing conviction that a strike on the railroads is a blow at public safety, and must not be tolerated. It is of supreme significance that the law has recognized the importance of a strong, efficient, and financially sound railroad system. It is of equal importance that the railroad managements seem at last to have become sufficiently chastened to accept their position as servants of all the people.

The Federal Trade Commission. — Since 1912 there has also been important legislation intended to strengthen the existing antitrust laws. A quarrel in the ranks of the Republican party, which occurred during the administration of President Taft, opened the door to the Democrats, who, under President Wilson, were to dominate the policies of the country for most of the second decade of the century, and who during this time passed some important regulatory laws. One part of the Democratic program for the regulation of industry was the passage, September 26, 1914, of a law creating a Federal Trade Commission. This Commission of five men, appointed by the President with the approval of the Senate, was given the regulation of any association, incorporated or unincorporated, organized to carry on business for profit, except railroads and banks. The

powers of the Bureau of Corporations, which was abolished, were taken over by the new commission.

The duties of the Commission may be grouped under four heads, as follows: (1) to prevent unfair competition, (2) to investigate alleged violations of the antitrust laws, (3) to help industrial organizations to readjust their methods so as to conform to the antitrust laws, and (4) to publish its findings as to the organization, conduct, practice, and management of business, both domestic and foreign.

The prevention of "unfair" competition. — The following sentence is the backbone of the law: "Unfair methods of competition in commerce are hereby declared unlawful." Herein the law recognizes the "rule of reason" as set up by the Supreme Court in the Standard Oil and Tobacco cases (p. 431). The Commission is empowered to investigate and prevent any suspected violations of the spirit of this clause. In the taking of testimony it may compel the attendance of witnesses and the production of records. It may order unfair methods to be discontinued, and, if the order is not obeyed, it may take the case to the federal Circuit Court of Appeals, where it must present in writing a complete record of its proceedings. If the corporation against which the order is issued feels that an injustice has been done, it may likewise appeal to the same Court. The latter in this case gives notice of the appeal to the Commission, which furnishes the Court with a record of the proceedings under which the order had been issued. After an examination of the records, the Court may issue its decree, "affirming, modifying, or setting aside the order of the Commission."

The purpose of giving these powers to the Commission was to make the regulation of business continuous instead of spasmodic. It has been over and over again demonstrated that laws and the courts alone are unable to keep up with the fresh schemes for defeating justice. The Federal Trade Commission, if it effects the purposes of the law, may prove to be like a hound always on the heels of its quarry. It may instantly order the discontinuance of acts which, although not, perhaps, explicitly condemned

by the law, may, nevertheless, be "unfair." Congress seems to have attempted to create a sort of legislative body which may issue a never-ending stream of prohibitions on the new unfair practices which are constantly being devised. Regulation is to take place steadily and all the time, instead of in a "series of explosions," as regulation by court decisions has been aptly called.

Investigation of violations of the law. — The Federal Trade Commission is also to discover violations of existing law. Through its constant connection with business organizations it was believed that it could more easily get information of violations of the antitrust acts than could the Department of Justice, upon which had hitherto rested this responsibility. In the performance of this duty the Commission is also to serve as a sort of "follow up" agent for the courts of law. Court decrees against violators of the antitrust laws have often been of little avail, because after such a decree some method or other might be found to defeat the object of the Court's decision. This, in turn, could be stopped only after another long and costly legal battle, followed by another Court decision, which would be out of date when rendered. The duty of the Trade Commission is to see that business goes straight all the time by not giving it an opportunity to depart from the paths laid down by the law.

Squaring business methods with the law. — A third very important function of the Trade Commission is to help corporations to bring their methods into compliance with the law. Uncertainty as to what the law demanded has been a difficulty met by business men who wish to conduct their affairs in a legal way. It is the duty of the Trade Commission to supply the needed information, so that industries may be conducted legally without the expense and uncertainties of a lawsuit. As an aid in this work corporations are required to file annual reports, and, when so requested, special ones as well. Herein are given details as "to organization, business, conduct, practices, management, and relation to other corporations . . . filing such reports."

Publication of information. — The Trade Commission also is to serve to keep the public and business instructed concerning the development of trade practices. It may publish its findings in its investigations of unfair practices or violations of the laws. It is not, however, allowed to disclose trade secrets of which it becomes informed through the required annual or special reports. It is hoped that much information as to up-to-date practices may be made available through its investigations. In this respect, as well as in others already noted, it is to serve as a constructive aid to trade. To date (1925), however, it seems to have stressed its “hound dog” functions rather than those of a constructive purpose.

The Clayton Antitrust Act. — In October, 1914, Congress passed the Clayton Antitrust Act. This law was intended, in part, as a supplement to the Sherman Act. It differs from the latter, however, in that it attempts to define certain acts which it makes illegal, instead of leaving the definition of what is illegal to the courts. It is more than an antitrust act inasmuch as certain clauses deal with banks, others with railroads, others with labor and labor organizations, and still others with farmers’ associations.

Illegal practices under the Clayton Act. — Three practices of industrial concerns engaged in commerce were declared illegal: (1) discriminations in price between different purchasers, (2) the “tying” agreement, and (3) the holding by one corporation of the stock of another. Interlocking bank directorates were also restricted, and the relations between railroads and industrial concerns were curtailed.

Discriminations in price. — One of the methods commonly employed in building up monopolistic control was the manipulation of prices in such a way as to destroy competitors. This practice took various forms, but one of the most common was the “undercutting” of a competitor, that is, the lowering of prices to cost or below wherever there was competition, thus compelling the competitor to enter the combination or forcing him into bankruptcy. In the meantime prices elsewhere would be

kept at high levels; and in the places where they had been reduced, they would be restored as soon as competition had been eliminated. The whole practice was declared illegal "*in case it tended substantially to lessen competition, or create a monopoly.*"

The "tying" agreement. — Another method of perfecting a monopoly very extensively used was for a concern which controlled, through patent rights or in some other way, standard articles in very common use in a given trade, to refuse their articles to dealers who would not agree to discontinue handling goods in the same line manufactured by competing companies. This is the so-called "tying" agreement. This sort of agreement was particularly offensive, because it often prevented the sale and general use of valuable devices merely for the reason that they were not controlled by the combine, and because, by discouraging inventions, it tended to nullify the patent laws, the purpose of which was to stimulate scientific discoveries. The patent laws, indeed, oftentimes were used as a shield behind which the monopoly was built up; for in many cases a single company would buy up patent rights to a number of fundamental machines in a given industry, and then, protected by the law from competition in these machines, would, by the "tying" agreement, prevent the use of other patents which it did not legally control. The practice was now definitely made illegal, "*in case it tended substantially to lessen competition or create a monopoly.*"

Intercompany stock control. — The Clayton Act also attempts to prevent the control of one corporation by another engaged in similar business. Corporations were forbidden to acquire the stock of others, where the effect would be "*substantially to lessen competition, restrain commerce, or create a monopoly,*" except as a pure investment without voting power. Furthermore, persons who were directors in a corporation engaged in commerce were forbidden to be directors in a competing concern if either one had a capital stock of one million dollars or over.

Interlocking bank directorates. — One section of the act also deals with concentrations of banking resources. No person

could henceforth be director, officer, or other employee of more than one bank where either institution had resources in deposits, capital, surplus, or profits of over five million dollars. The same restriction was made in the case of national banks, no matter what their resources, situated in cities of over two hundred thousand population.

Restrictions on common carriers. — Lastly, common carriers were forbidden to make contracts for supplies, construction, and maintenance involving over fifty thousand dollars in the aggregate in any one year with any corporation with which they had directors or other officials or agents in common. Such contracts may be made, however, under competitive bids submitted to the Interstate Commerce Commission.

The exceptions in the Clayton Act. — Almost as important as its positive provisions were the exceptions to its application which the Clayton Act made. Three kinds of organization — labor, agricultural, and horticultural — were exempted from the action of all the antitrust laws. This means that no matter how much such organizations act in restraint of trade, or how great a monopoly they may affect, or how much they may prevent competition, they are, nevertheless, outside the application of the federal antitrust laws. One clause also attempts to make legal the boycott,¹ for which, as we shall see later (p. 538), labor unions had been punished under the Sherman Act only a few years before.

The Clayton Act an attempt to restore competition. — In so far as it deals with the problem of big business and finance, the Clayton Act is an attempt to compel a return to the old ideals of free competition. It is designed to do what the Sherman Act had failed to do — to prevent the growth of a unified control among the industries. It will thus be seen that the act attempts to stem the great movement which we saw had overturned the old system of laissez-faire and of unrestricted competition, and which had so rapidly brought about a greater degree of harmony of management and purpose among so many

¹ See Study 10, page 444.

of our large industries. Whether the policy of withstanding by law this great revolution can be successfully carried out remains to be seen. The Great War, coming so soon after the passage of the Clayton Act, had the effect of practically suspending the measure for the time being. Parts of it are so worded as to seem easily evaded. Other parts may be adjudged unconstitutional. At any rate it will doubtless have to meet many attacks in the courts. Probably a long time will have to pass and many court decisions be rendered before we can surely know just how effective the law will prove to be.

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QUESTIONS

1. Why is federal control the best mode of regulating railroads?

2. Would any of the developments mentioned in the Senate Report of 1886 have come to pass even if there had been no railroad discriminations? Summarize the findings of this committee.

3. What were the provisions of the Interstate Commerce Act of 1887? What were the reasons for the ineffectiveness of the act? In what ways did decisions of the Supreme Court weaken the act? Show how the railroads took advantage of the conflict between state and federal authority.

4. Learn the exact wording of the Sherman Antitrust Law defining illegal acts. Why was this definition limited to interstate and foreign commerce? (U. S. Constitution, art. I, sect. 8.)

5. Describe the campaign of publicity between 1896 and 1911. What is the value of publicity? Is there any danger of its being abused? Can you see any reason why full and free publicity is more necessary in a democracy than under more autocratic forms of government?

6. Describe the powers of the Bureau of Corporations. What work did it accomplish during its lifetime?

7. What was the Northern Securities case? What was the defense of the railroads? What bearing did the decision have on the holding company? What were the decisions in the cases of the Standard Oil and the Tobacco companies? What is meant by the "rule of reason"?

8. Show how some of the defects of the Interstate Commerce Act were remedied by the Elkins, the Hepburn, and the Mann-Elkins acts. What were the results of this legislation? Is there danger of wrecking railroads by such regulation? Would the roads have been in better or worse condition at present had they been strictly regulated from the beginning?

9. What lessons were learned from the Great War concerning the needs of the railroads? What developments due to the war rendered the con-

dition of the roads still more precarious? Under what conditions did the Esch-Cummins Act restore the railroads to private control?

10. What powers were given the Federal Trade Commission? Commit to memory the words defining unlawful competition. Is there anything in this definition at variance with earlier ideas regarding competition? Describe the procedure when unfair competition is discovered by the Commission. What is the value of continuous regulation of business? In what ways is the Commission empowered to assist the Department of Justice and the courts? How may it be of service to the business man? In what way did the law recognize the value of publicity? Can you see any reason to fear that the Commission might make a nuisance of itself instead of a beneficent constructive agency?

11. What acts were made illegal by the Clayton Antitrust Act? Is it advisable for the law to define illegal acts, or is it better to leave to the courts the decision as to illegality? How had discrimination in price been used to destroy competition? Explain the "tying" agreement. What were some of the results of such agreements? What were the provisions of the law as to stock control and interlocking directorates? What was the purpose of the clause restricting the railroads as to the concerns from which they might purchase their supplies?

12. What bodies were exempted from the provisions of the Clayton Act? Is such exemption fair? Show by quoting from the law that the Clayton Act aims to restore competition. Can competition be restored by law?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the general welfare would be better promoted by the government ownership and operation of the railroads.

2. Resolved that the Plumb plan of railroad control offered better chances of a permanently satisfactory solution of the railroad problem than the Esch-Cummins Act.

CHAPTER XXV

CURRENCY, BANKING, AND FINANCE (1860-1920)

- Introduction
- Expenses of the Civil War
- Suspension of specie payments
- Loans
- Taxes
- Legal-tender notes
 - Extent of the issues
 - Character of legal-tender issues
 - Depreciation
- The national-banking system
 - Condition of bank currency
 - Provisions of the National Banking Acts
- Financial problems since 1865
- Cheap money struggles
 - Paper money and the national debt
 - The question of retiring the greenbacks
 - Demonetization of silver
 - The Bland-Allison and the Sherman silver acts
 - The free-silver campaign
 - The victory of the single standard
- The growth of credit currency
 - Bank checks
 - Bank credit
 - Credit and financial crises
- Elastic and mobile currency
 - Bank notes unresponsive to business needs
 - Inconvertibility of bank resources
 - Immobility of bank resources
- The Federal Reserve Act
 - Organization of the Federal Reserve system
 - Reserve requirements and note issues
 - Rediscounting
 - The regional system
- The expansion of banking functions
 - The "money trust"
 - Growth in size of banking institutions
 - Investment banks
 - Interlocking directorates
 - Concentration of banking power

Introduction. — The Civil War cost a great deal of money. When it began, moreover, it found the country quite unprepared to meet the enormous expenditures which it was to require; for men little foresaw how long the struggle was to last and how much it was to cost. In the second place, the country lacked a centralized system of finance. Every state had its own paper bank currency, and this was adequately backed by specie only in a few instances. A large part of the currency of the country was, therefore, wholly useless when it came to the payment of the bills of the nation.

Expenses of the Civil War. — As sources of revenue the government relied upon taxation, borrowing, and the issuance of paper money. At the beginning of the struggle Congress authorized Chase, the Secretary of the Treasury, to borrow two hundred and fifty million dollars. This, together with certain small increases in taxation, it was believed, would be sufficient to carry the war to a successful conclusion. How greatly in error the estimate was, the following table of war-time finances will show:

Loans, including paper money.....	\$2,622,000,000
Taxation and other sources.....	667,000,000

Suspension of specie payments. — During most of the war the country used paper money. By the end of the year 1861 the banks everywhere suspended specie payments, and the government was forced to do the same. Henceforth, nothing but paper money of one sort or another circulated anywhere. A little later even the subsidiary silver coins disappeared, and the government was forced to print paper script of denominations less than one dollar for the everyday trade of the people.

Loans. — The government at first depended for its loans upon the banks, chiefly the larger ones of the great cities. It was not until 1863 that the people began generally to buy government bonds. For example, an act of February, 1862, authorized the borrowing of five hundred million dollars. Ten months later only twenty-three million seven hundred and fifty thousand of

this loan had been subscribed. In 1863 Jay Cooke, head of a great Philadelphia banking house, was made a sort of agent for the disposal of bonds. Through him appeals were made directly to the people by agents sent all over the country. This method of selling bonds more nearly resembled the methods used in disposing of the "liberty bonds" during the Great War, and was generally successful.

Taxes. — Little revenue from taxation was received until 1863. Then money began to come in from greatly increased tariffs, and from internal revenue and income taxes. Of these the most important were the internal revenue taxes. By the end of the war practically every article used by man had to yield its tax. In the process of manufacture some things were taxed five or six times before they reached the consumer. The income tax did not bring in much revenue until after 1865, but from then until 1872, when it was abolished, it was an important source of income.

Legal-tender notes: *Extent of the issues.* — Because of the lack of real money, Congress in 1862 authorized the printing of one hundred and fifty million dollars of paper money. This was made a legal tender for the payment of any bill whether public or private, except in the case of the customs dues and the interest on the national debt, both of which were payable only in gold. It was not long before another hundred and fifty million dollars of "easy money" was printed, and soon after still another. On June 30, 1864, there was in circulation four hundred and thirty-one million dollars' worth of legal-tender notes, popularly known on account of their color as "green-backs." From this time on no more were issued, inasmuch as money had begun to pour in from taxation and loans.

Character of legal-tender issues. — The issuance of legal-tender paper may be characterized as a forced loan. In other words, the government offers the paper money to those from whom it makes its purchases, in return for which the people are forced to surrender goods possessing actual value. The only security that they have that they will ever get back for the paper as much as

they gave for it is the willingness and the ability of the government to maintain its credit. They never get any interest. In the issues of the legal-tender notes, however, the federal government set no time for their redemption. In fact, some had very serious doubts whether such action would ever take place, because many people believed in paper money and in the power of the government to give value to the valueless merely by the exercise of its "fiat."

Depreciation. — The doubts thus aroused were soon reflected in a decline in the value of the paper money, accompanied by an enormous rise in the prices of commodities. There were, of course, other causes for the rise, such as the decrease in production and the very great increase in demand. Paper money, however, was probably the greatest single cause of the inflated prices.

DECREASE OF CURRENCY VALUES AND RISE OF PRICES AND WAGES

YEAR	VALUE OF CURRENCY IN GOLD	YEAR	PRICES	WAGES
1862	\$98	1860	100.00	100.00
1863	69	1861	100.60	100.80
1864	64	1862	117.80	102.90
1865	46	1863	148.60	110.50
		1864	190.50	125.60
		1865	216.80	143.10

National-banking system. — In 1863 and 1864 were passed acts upon which almost without change for fifty years the national banks of the country were established. Two of the main purposes of the acts were to rid the country of the chaos of state-bank circulation, and to induce a better market for United States bonds.

Condition of bank currency. — By 1860 many of the states had so amended their banking laws as to insure greater security for depositors and holders of the state-bank notes. Nevertheless, the banks of each state differed from those of all the others, and even within a given state the laws often permitted various

kinds of note-issuing institutions. Due to this situation there were in 1862 seven thousand different styles of notes in circulation. There was no assurance that one bank would accept the bills of another. To add to the confusion and uncertainty there were thousands of counterfeits afloat. In 1862 out of a total of one thousand four hundred and ninety-six banks, there were only two hundred and fifty-three whose notes had not been altered or imitated in some way. Merchants had to keep constantly on hand their bank-note "detectors." Ordinary persons merely accepted what was offered and trusted to luck that they were getting something genuine. People preferred old, ragged bills because their condition was some evidence that they had passed successfully the scrutiny of many eyes.

Provisions of the National Banking Acts. — The acts provided for the establishment of banks of not less than fifty thousand dollars capital. On purchasing United States bonds and depositing them in the Treasury, the banks might receive from the Treasury notes up to ninety per cent of the par value of the bonds, or of the market value when they were below par. The banks were divided into three classes: central reserve city banks, reserve city banks, and country banks. The central reserve city banks were those situated in three or four of the largest cities; the reserve city banks were those in smaller cities; all others were country banks. The central and the reserve city banks were required to keep a twenty-five per cent reserve of specie and the country banks fifteen per cent as a protection to their deposits. The country banks might keep three-fifths of their reserves on deposit with the city banks, and the reserve city banks one-half of theirs with the central reserve banks, if they so desired. The Secretary of the Treasury might also name certain banks to receive any government revenues except the customs dues. This was a greatly needed service at a time when the government was reaching out into every hamlet for internal revenues and income taxes. Provision was also made for the conversion of state banks into national banks in case any wished to change. Owing to a tax of ten per cent

levied in 1865 upon state-bank notes, these issues within a few years wholly disappeared.

Financial problems since 1865. — During the last fifty years the most important questions of currency and banking have been (1) the political struggle over cheap money, (2) the growth of the credit system, (3) the problem of an elastic and mobile currency, and (4) the expansion of banking functions. In the following paragraphs let us consider these topics in order.

Cheap money struggles. — Almost immediately after the close of the war it became evident that the old sentiment in favor of cheap money was by no means dead. At first it was to show itself in a strong movement to keep in circulation the greenbacks and other paper money which had been issued by the government during the war. Later on, when the question of the greenbacks had been in a manner settled, debased money found its advocates in the supporters of the silver dollar, which had gradually sunk to a value less than half that of the gold dollar.

Paper money and the national debt. — The question of the greenback first came up in connection with the payment of the national debt. On September 1, 1865, this stood at two billion eight hundred and forty-six million dollars. During the war a great many different kinds of loans had been floated. In June, 1866, there were loans bearing five different rates of interest and maturing in nineteen different periods of time. These variations caused great confusion and difficulty in the administration of the debt and in making provision for the payment of principal and interest. The Secretary of the Treasury, Hugh McCulloch, was anxious, therefore, to exchange the existing bonds and notes for others having uniform dates of maturity and rates of interest. Much of the debt came due in two or three years and bore high rates of interest. It was desired that this part, at least, should be funded into long-term bonds at lower rates.

Paper-money men were strongly opposed to thus loading the nation with a burden of interest for a long time to come.

They fought also the proposition to pay interest in gold, which was at a large premium over paper. Inasmuch as many of the bonds failed to specify payment of the principal in gold, the paper-money advocates also demanded that this be paid in greenbacks. What was good enough money for the "plow holder," they believed to be good enough for the bond holder. By 1868 the idea of bond redemption in paper had gained such headway that it was made a plank in the Democratic platform, although the Democratic candidate, Horatio Seymour, was opposed to the plank. The Republicans won the election, however, and in 1869 an act was passed pledging the payment of the debt in coin or its equivalent.

The question of retiring the greenbacks. — When Congress authorized the issuance of paper money, it did so distinctly as a war measure, and there was, consequently, little opposition at the time. It was generally believed, however, that eventually the greenbacks would be redeemed in gold and then destroyed, never to be issued again. When this process began, however, there was at once a loud outcry against it, particularly from the Middle Western sections of the country, where capital was still lacking, where debtors were numerous, and where national banks and bank notes were scarce. These sections feared that if the paper was withdrawn money would rise in value and they would have to pay their debts, contracted in many cases when money was cheap and of little purchasing power, with money that was dear and that would purchase much. They denounced the national banks, which, they asserted, were, by issuing notes, usurping a function rightfully belonging only to the national government. They denied that paper issued by the government is not real money, and argued that the value of money does not depend upon the material out of which it is made or upon its redeemability, but solely upon the "fiat" of the government.

There finally came into being the Greenback party, which lasted long enough to put presidential candidates into the field in the elections of 1876, 1880, and 1884. In the Congressional

elections of 1878 it polled over a million votes. The controversy ended in a compromise. In 1875 Congress passed an act providing for the contraction of the greenbacks until only three hundred million dollars' worth should remain in circulation. The same act also authorized the Secretary of the Treasury to provide for the redemption of the paper in gold after January 1, 1879. By that date, accordingly, Secretary Sherman had accumulated in the Treasury one hundred and thirty-three million dollars in gold waiting for the notes. Very few of the latter came in, however, as popular confidence in them was restored by the measures for redemption. In 1878, too, when the total of greenbacks in circulation had fallen to three hundred and forty-six million six hundred and eighty-one thousand dollars, Congress forbade any further contraction. At this figure, with slight variation, they have stood since that time.

Demonetization of silver. — We have seen (p. 210) that the coinage act of 1834 provided for a silver dollar that was worth slightly more than a gold one. This premium lasted throughout the period preceding the Civil War and for several years afterward. The silver dollar for this reason disappeared from circulation. In fact, for nearly three-quarters of a century prior to 1873 very few of these coins had been minted. In revising the coinage laws in 1873, Congress failed to provide for the coinage of any more silver dollars. Few people, including many Congressmen and President Grant himself, knew just what had happened. The lack of advertising of the change furnished a basis later on for the friends of silver to charge that its demonetization had been slipped through Congress by a conspiracy of Eastern bankers — the so-called "crime of '73."

During these years there were being opened large silver deposits in the Western states. At the same time other countries had demonetized silver. The result was a serious decline in the price of the metal. Between 1872 and 1895 the fall amounted to over fifty per cent. All those who were interested in the silver mines, therefore, favored free coinage of the silver dollar.

From 1875 to 1895 there were also general declines in the prices of farm products. This depreciation hit with especial force the farmers of the Mississippi and Missouri valleys. Elsewhere we have noticed the various farmers' movements which grew out of the discontent aroused by this state of affairs. It was not difficult, therefore, to convince the farmers that part of their troubles were due to the insufficiency of money in circulation. Hence came the opposition to the retirement of the greenbacks. On the same grounds was made the attack upon the law of 1873 relating to silver.

The Bland-Allison and the Sherman silver acts. — In 1878 the pressure of the silver men secured the passage of the Bland-Allison Silver Act. This act permitted the Secretary of the Treasury to purchase at the market price for coinage into dollars as much as four million dollars' worth of silver bullion each month, and required him to purchase at least two million dollars' worth. Between 1879 and 1890 slightly over three hundred and eight million dollars' worth was thus purchased. During the latter year the Sherman Silver Act so changed the law as to require the Secretary to purchase a certain amount — four million five hundred thousand ounces — of silver bullion each month and to pay for it in treasury notes of full legal tender to be redeemable in gold or silver. After July 1, 1891, no more silver dollars were to be coined except when needed to redeem the notes.

The free-silver campaign. — The matter, however, was not settled by the Sherman Act. Prices continued low, and there followed a year or two of poor crops. In 1893 there was a severe crisis and many failures occurred. A large number of Western farmers were unable to meet mortgage payments and lost their farms. The result was that in 1896 the Democrats, dominated by the remnants of the old Greenback party, the Farmers' Alliance, the Populists (p. 416), and the silver producers of the West, nominated William J. Bryan as their candidate for the presidency on a platform demanding the free and unlimited coinage of silver at a ratio of sixteen to one. A group of Western Re-

publicans, headed by Senator Teller of Colorado, bolted the Republican convention and joined the Democrats. On the other hand, Eastern Democrats were as much dissatisfied with the result of the Democratic convention, and held one of their own in which they nominated a gold candidate. The Republicans nominated William McKinley on what amounted to a gold platform.

The campaign that followed was one of the most intense and exciting in American history. Opposed by most of the greatest newspapers, Bryan inaugurated the custom of haranguing the public from the rear platform of a special train. In this way he traveled thousands of miles, making hundreds of speeches to millions of people. The Republicans won the election, however, and some four years later gold was established as the single standard of value.

The victory of the single standard. — The setting of the country upon a gold basis meant that the Treasury must be ready to redeem on demand all paper money and all silver dollars issued by the government. For this purpose provision was made whereby a gold reserve of at least one hundred million dollars should at all times be kept in the Treasury. This act ended the silver issue. Even at that time conditions were so changing as to blunt the contentions of the silver orators. Gold was increasing so fast as to answer the argument favoring an increase in the metallic currency. Prices were rising likewise, and the Western farmers were on the eve of great prosperity (p. 497).

The growth of credit currency: *Bank checks.* — One of the most striking developments in the industrial and commercial world within the last three-quarters of a century has been the increasing use of bank checks. A large percentage of the business transactions of the whole United States is now done by means of drafts and checks. This is particularly true of corporations and other business concerns, but during the last twenty-five years has also become more and more common in the affairs of private individuals. From eighty to eight-five per

cent of the business of the country is now done in this way. In 1913, it is estimated, four hundred and seventy-two billion dollars' worth of transactions was made by check and only eighty-three billion dollars' worth by cash. In other words, to the extent indicated above, checks and drafts have taken the place of currency.

Bank credit. — The use of bank checks indicates, in the first place, that people have been taught to use the banks as a place of deposit for their money, instead of hiding it in the home, as once was done. Secondly, it is one sign of a vast system of credit that has been established through the agency of the banks. By means of this system a man can carry on a business or an industry with perhaps little capital of his own, in a way that would have been impossible before the Civil War. In fact, a very large percentage of all our enormous business structure rests today upon credit. Even the banks themselves rest upon a form of credit. To explain how a bank can lend amounts greater by many times than its capital and reserves, and have more obligations than it could possibly pay if suddenly called upon to do so, would take us far into the field of banking. It is enough for us here to know that the bankers have invented a system by which they can make a very little money do the work of a large sum. Professor Irving Fisher estimates that in 1913 checks for fifty-four thousand dollars were written on every one thousand dollars on deposit in the commercial banks of the country.

Credit and financial crises. — Nevertheless, in the growth of the credit system there lurked many dangers, chief among which was the possibility of overextension of credit. We have already seen (p. 208) how disastrous may be the results when too many people go into debt in order to build up projects from which the returns can come only at some time in the future. It was precisely for this reason that the increased facilities worked out by the banks for lending money were likely to bring financial disaster.

In 1873, in 1893, and again in 1907, severe crises convulsed the

country. At other times there were also depressions which did not get to the panic stage. In every case the crisis or depression was preceded by several years of brisk and rapidly increasing industrial activity. These activities the banks were asked to finance, and credit was given beyond the safety point. When all the banks were lending three, four, or five times their resources, it can easily be seen how dangerous a situation was being created. Financial stability depended on whether the loans could be repaid when due. In short, the securing of credit might become too easy, and such situations as described above be made possible.

Elastic and mobile currency. — Many have laid the frequent industrial crises to what is called an inelastic and immobile currency. Inelasticity in the currency means an inability to expand the actual legal money in times of business activity and to contract it when times are dull. Immobility of currency has been another defect of our financial system. In addition to the cycles of active and slack times, there are times when money is in greater demand in one place than in another. Such, for example, are the months following the Western harvests, when this section makes heavy calls upon the money market. In a perfect monetary system money would flow from the places where it was not so much needed to those where the demand was great. In other words, it would be *mobile*, easily moved. To sum up, the perfect currency system would permit of an easy expansion of the amount of currency in circulation in times of business activity, and as easy contraction when times were slack. It would permit, also, of a ready "piping" of money to points where the needs for the moment might be greatest.

Bank notes unresponsive to business needs. — The national-banking system did not supply an elastic and mobile currency. In the first place, as we know, a bank could issue notes only up to ninety per cent (in 1900 increased to one hundred per cent) of the par value of government bonds deposited in the United States Treasury, and even then only to an amount equal to its capital. The amount of notes that a bank might issue was thus

rigidly fixed. Sometimes notes did, indeed, expand and contract. If government bonds were low, banks were likely to buy them and issue notes upon them; if they were high, the process would be reversed. Again, when bonds fell due and were retired, the bank notes issued on them must necessarily be retired also. Hence, expansion and contraction occurred only to keep pace with government bonds. The notes did not, however, except by chance, expand or contract with the needs of business. As one writer puts it, "they are decidedly elastic. They expand when there is need of contraction, and contract when the need is for more currency."¹ Between 1880 and 1891 bank-note issues declined from three hundred and forty-five million dollars to one hundred and sixty-nine million dollars, and part of these years were years of great business activity, when more money, not less, was demanded. Again, between 1900 and 1908 the volume of bank notes increased from two hundred and forty-six million dollars to six hundred and ninety million dollars, not because business demanded the money, but because changes in the law had made government bonds more attractive to the bankers.

Inconvertibility of bank resources. — Other defects in the system, too complex for discussion here, added still more to the difficulty of expanding and contracting the currency as occasion demanded. One of these defects, which we shall barely mention, is the fact that banks oftentimes found it very difficult, and in some cases legally impossible, to raise funds on the securities, such as stocks, bonds, and commercial paper which they had in their vaults. Although it had plenty of resources, the bank would be prevented from using them to secure money when most needed, and financial failures might result.

Immobility of bank resources. — We now come to one cause of the immobility of bank currency. Every bank, national or otherwise, had to keep on hand all the time a gold reserve much larger than was needed, except for short and widely-

¹ Fred Rogers Fairchild in Phillips' *Readings*, p. 682.

separated periods. There were by 1910 some seventy-two hundred national banks scattered all over the country, and many more hundreds of other kinds. The specie reserves were, therefore, as widely scattered. It was because of this dispersion of the reserves that money scarcity often occurred in one section or another, even at times when money was generally plentiful. The panic of 1907 was caused by a money stringency in New York, and yet there was more gold in the United States at the time than in any other country of the world. Because the gold reserves were so widely scattered, it was impossible to mobilize them in time to prevent disaster. They were a vast immobile reserve.

The Federal Reserve Act: *Organization of the Federal Reserve system.* — In the year 1908 a Commission was created to study the banking question thoroughly. All European systems were investigated, and many volumes of reports were written. The final result was the passing in 1913 of the Federal Reserve Act. This law authorized the Secretary of the Treasury, the Secretary of Agriculture, and the Comptroller of the Currency to divide the country into from eight to twelve districts (twelve were established), in each of which should be organized a federal reserve bank. All national banks were required to accept the terms of the act and to subscribe, as it was called for, six per cent of their capital stock to that of the federal reserve bank in their districts. The capital of the reserve banks was in no case to be less than four million dollars. Six of the nine directors of each reserve bank were to be chosen by the member banks, three by the Federal Reserve Board. Four of the men so chosen must be experienced bankers. The Federal Reserve Board was established to have general supervision over the whole system, and was to consist of seven members—the Secretary of the Treasury, the Comptroller of the Currency, and five others appointed by the President with the concurrence of the Senate. The terms of the appointed members were to expire one every two years, so that there would always be four experienced members on the board.

Reserve requirements and note issues. — The federal reserve banks serve as banks for other banks, but not, under ordinary circumstances, for individuals. In accordance with an amendment of June 21, 1917, the members must deposit with their reserve bank their entire legal reserves. The reserve banks, when so authorized by the Federal Reserve Board, may issue notes for which a reserve of forty per cent in gold must be maintained. These notes are made obligations of the United States Treasury. National banks are permitted to issue notes as before if they desire. As the total national bank reserves were by this measure brought into twelve centers, instead of being scattered among seven or eight thousand, smaller reserves were permitted as follows:

	ON DEPOSITS PAYABLE WITHIN THIRTY DAYS	ON DEPOSITS PAY- ABLE AFTER THIRTY DAYS' NOTICE
Central Reserve City Banks.	13%	3%
Reserve City Banks.	10%	3%
Country Banks.	7%	3%

Rediscounting. — The act permits member banks to deposit with the reserve bank securities which they hold on loans, and to receive in exchange Federal Reserve Bank notes. In this way banks could raise new money when it was needed, and, consequently, it was hoped, the rigidity of the currency would be removed. When the need was over, the notes could be sent back to the reserve bank in return for the securities which had been deposited with it. Furthermore, if the Reserve Board found that too much money was being borrowed, it could, in order to guard against overexpansion, charge such rates on loans as to prevent the banks from resorting to this method of securing funds. The currency would, therefore, automatically rise and fall with the flow and ebb of the tide of business, and also at the will of the Federal Reserve Board.

The regional system. — Another important feature of the act was the one providing for regional, or district, reserve banks, in-

stead of a central bank for the entire country. One of the reasons for this provision was to prevent too great a concentration of funds in a particular section, and to make sure that everywhere there were adequate banking facilities. The question of the concentration of money resources has been since the opening of the twentieth century so vehemently discussed, that it is necessary to devote some attention to it at this time.

The expansion of banking functions: *The "money trust."* — Ever since the Civil War there has been a growing belief that the money resources of the country were more and more falling into the control of smaller and smaller groups of men. It was freely charged that, as in other phases of the industrial and business world, a "trust" controlled the money of the land, and that men who were out of favor with the trust could not get accommodation at the banks. Thus, it was asserted, all industry was practically in the power of this group, who could make or destroy at will the fortunes of any individual or any enterprise. So firmly was this belief rooted in the minds of many people that the House in 1912 appointed a committee to investigate the matter. The report of this committee served to confirm the suspicions of those who had formerly believed the trust to exist.

Growth in size of banking institutions. — Whatever may be the truth as to a money trust, there is no doubt that banking institutions have increased enormously in size. While this growth has been going on for many decades, it has been particularly marked since the beginning of the twentieth century. The banks have merely followed in line with what we have seen to be taking place elsewhere in commerce and industry. In some of the larger cities there are no more banks now than there were in 1860, although the banking resources of these cities have increased ten or twenty fold. This condition has resulted, as in the industries, almost entirely through the consolidation of several institutions into one. Moreover, certain banks have grown far more than others, so that in each of the greatest cities two or three control much more than half the banking resources. These banking changes took place to meet the re-

quirements of big business. The laws forbade any institution to lend more than one-tenth of its capital and surplus to any one customer. The customers of banks, however, grew so enormously in size that one-tenth or even all of the lending power of any one bank was not enough. Concentration, therefore, became necessary.

Investment banks. — In the meantime, another banking function had been finding more and more favor. Many banks have always, in addition to their ordinary functions, been interested in the selling of bonds and stocks, and in organizing and promoting new industrial enterprises. Such institutions are known as investment banks. So profitable has this activity become that some of our largest banks do little else.

Since the opening of the twentieth century, therefore, the headquarters of industry had more rapidly than ever been moved to a few great centers, New York being far in the lead of all the others. This accelerating concentration of business headquarters was due almost entirely to the desire of business to be in close contact with the financial resources of the country.

Interlocking directorates. — Furthermore, the directors of some of the greatest banks were also directors of many insurance companies and savings banks — both great fountains from which comes a constant stream of money seeking investment. Rapidly, too, community of directorship was extended to many of the great industrial concerns — to the railroads, the mines, and the great manufacturing companies. The House Committee above referred to showed that three banking houses of New York by such means controlled over twenty-two billion dollars' worth of capital resources.

Concentration of banking power. — It came about, therefore, that one-fourth or more of the total banking power of the country was controlled by the large banks of New York City and Chicago. More than that, the bankers have by interlocking directorships been placed in a position not only to control the policies of institutions, such as life insurance companies, but also those which are in constant need of funds — the great indus-

trial and commercial interests of the country. They possessed the power, therefore, to "steer" money to those whom they favored, and to divert it from those who met with their displeasure. It is unnecessary to inquire how greatly this power has been abused. It was enough that it existed at all. This was one of the most important reasons for the passage of the Federal Reserve Act and for the restrictions on interlocking directorates in the Clayton Act (p. 440). The regional reserve system was an attempt to decentralize to a degree the banking power of the country and place it in the control of the people, while at the same time it concentrated the money reserves for the service of the people. It was a step toward placing public supervision over a concentrated money power which the nation dared not leave unchecked.

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QUESTIONS

1. Describe the three methods adopted by the government to meet war expenses. State, giving reasons, which method you consider the best.

2. In what ways was it intended that the National Banking Acts should meet the financial requirements of the nation?

3. How did paper-money advocates propose to deal with the national debt? Is it just to extend loans so that future generations have to pay for wars for which they are not responsible?

4. Was there any justification in the demands of debtors for cheap money? What was the argument of paper-money men as to the proper agency for issuing paper money? What disposition was finally made of the greenbacks? Do you find anything in the development of mediums of exchange in the last twenty-five years which seems to bear out the contention of the Greenbackers and free-silver men that a greater volume of currency was needed?

5. Why did Congress demonetize silver in 1873? Was silver the only commodity the price of which fell between 1873 and 1896? Describe the Bland-Allison and the Sherman silver acts. What were the issues in the free-silver campaign of 1896? In what way was the country put upon a gold basis?

6. Show how bank checks have taken the place of currency. Explain why the use of credit has grown so largely since the Civil War. What are the dangers to an industrial system founded on credit? Can you see anything in the way banking has developed which might help to explain why bankers opposed the issuance of paper money by the government?

7. In what ways did the national-bank currency fail to meet the requirements of the nation? What other defects were found in the national-banking system?

8. Describe the organization of the Federal Reserve system. Show how it is designed to correct the weaknesses of the national-banking system. Does the Federal Reserve permit of a greater extension of credit than formerly? How are reserve notes guaranteed? How may the Federal Reserve banks check the overextension of credit?

9. What is meant by the "money trust"? What has caused the concentration of banking resources? Show how the great bankers have become connected with the industries, and through what channels they secure control of the capital resources of the country. (See MARSHALL and LYON, *Our Economic Organization*, 354-369.)

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that banking should be so regulated by law as to prevent the control of industrial organizations by bankers.

2. Resolved that all paper money should be issued, with adequate security, by the federal government.

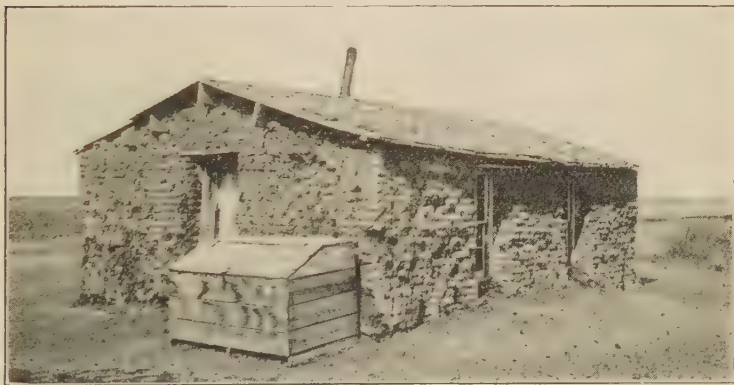
CHAPTER XXVI

AGRICULTURE SINCE THE CIVIL WAR: GENERAL DEVELOPMENT TO 1900

- Agriculture during the war
- The westward movement
 - The effects of the Homestead Act
 - The railroads
 - Foreign immigration
- Inventions
- Bonanza farming
 - Machinery
 - Capital
- Cattle grazing
- Home markets and the development of intensive farming
 - Intensive agriculture in the East
 - Intensive agriculture in the West
- Transportation and the development of intensive farming
 - Perishable foods
 - Southern agricultural changes

Agriculture during the war. — In the South the story of agriculture during the four years of war is but a record of destruction. It was a destruction so thorough that forty years elapsed before restoration had really begun. In the North, on the other hand, there was but little interruption of the rapid development which had begun in the two decades before 1860. The totals of crop production during the war were greater than those of any previous years. This record was made in spite of the fact that a tenth or more of the male population was engaged in the war. It was the new farm machinery, especially the reaper and the corn planter, that made possible such a result. Of reapers there were two hundred and fifty thousand in operation in 1865. Not only did this machine insure food for the Northern people and armies, but a large surplus for export as well, thus furnishing a welcome source of revenue.

The westward movement: *The effects of the Homestead Act.* — During the war and for twenty-five years following, food production and rural population, too, steadily increased. Foreign immigrants poured into the agricultural states, and the frontier was pushed farther and farther into the West — a movement hastened by the passage in 1862 of the Homestead Act. This law made a free gift of a hundred and sixty acres to any man who would settle upon them. When the war ended



Courtesy of the Department of Agriculture

A SOD HOUSE ON THE WESTERN PLAINS

The pioneer of the forests built his first house of logs: the pioneer of the plains built his first house of sod.

men marveled at the way in which the great armies were absorbed without disturbance into the everyday life of the nation. The free lands and rapid industrial expansion sufficiently explain the phenomenon. In a land better settled and of more firmly established habits the results might have been different.

The last of the cheap agricultural lands were quickly absorbed. The people filled up Minnesota, Nebraska, eastern Kansas, and pushed into the Dakotas. Within twenty-five years from the beginning of the war settlement was crowding from all sides upon the mountain and desert regions. There were left only small patches here and there still to be opened. By 1885,

therefore, the great work of peopling the wilderness and the plains, begun by the colonists nearly three hundred years before, was practically complete.

The railroads. — Just as the railroads had exercised a potent influence upon the settlement of the Mississippi Valley, so were they to be equally influential in the regions farther west. Since the middle of the century many people, drawn by the lure of gold, land, and adventure, had passed over or around the desert to the Pacific coast. In order to bind these districts to the Union the federal government, as we have seen, generously aided the building of the Union Pacific and other railroads (p. 337).

These roads were vital to the West. Reversing the usual custom, they were built where few white men yet lived, in the expectation that the people would follow them. In this hope those who undertook the enterprise were not disappointed. The companies vigorously advertised the country through which the roads extended. It was the Northern Pacific which first experimented with wheat raising along the Red River, and thus began to draw farmers to northern Minnesota and Dakota.

Foreign immigration. — The expansion of the agricultural regions was hastened by other agencies as well. After 1870 the increase of immigration was very rapid. Between 1870 and 1880 an average of two hundred and eighty thousand foreigners entered the country every year, the larger part coming from the British Isles and the countries of northern Europe, especially Germany and the Scandinavian Peninsula. Between 1880 and 1890 the average number per year was over five hundred thousand. The magnet drawing the immigrants was cheap land. They crowded into the states of the northern Mississippi and Missouri valleys, mingling with the native population and becoming rapidly assimilated.

Inventions. — New discoveries and inventions kept pace with the expansion of the agricultural regions. Elevators, which in an hour could handle ten thousand bushels of wheat, were built at Chicago and Buffalo. At every station along the

railroad lines they also appeared in miniature. Refrigerator cars came into use in 1872 and made the slaughter of hogs and cattle a year-round industry, instead of one confined, as formerly, to the colder seasons. In the 'seventies the twine binder solved the greatest harvesting difficulty since the advent of the reaper. This machine would not only cut grain, but bind it as well. Not many years later, with the aid of steam power, it added thresh-



Courtesy of International Harvester Company of America

THE TWINE BINDER

When this machine was invented the labor of harvesting was taken from human beings and given to horses and steam and gas engines.

ing to its manifold accomplishments, although the "combine," as it was called, was used only on very large and level fields. The harvester, cutting, binding, and perhaps threshing the grain, became one of the greatest influences in the development of the wheat fields of the Northwest and the Pacific coast. Toward the end of the century the newly developed gasoline engine was about ready to render its aid to the farmer, plowing, planting, hauling, and doing for him a multitude of other services once done by hand or horse power.

During 1878 the "roller," or "new" process of making flour was introduced. This process was developed by the Minneapolis millers from ideas derived from inventions already in use in certain European mills. The old-fashioned millstones could produce the highest grade flour only from winter wheat. After the introduction of the roller process spring wheat flour took its place among the highest grades. As spring wheat alone could be raised advantageously in the more northerly sections, the importance of this discovery will be seen at once. Upon it depend the great wheat fields of Minnesota, the Dakotas, and Montana, as well as those more recently opened in western Canada. It gave to the world hundreds of millions of bushels of wheat annually which otherwise might not have been produced.

Bonanza farming: *Machinery.* — It was during this period that what we know as "bonanza" farming, or farming on a large scale, began. We have seen the wheat fields moving with the people, always keeping up with the frontier and the cheap lands. We now find the greatest wheat areas in Minnesota, Dakota, Nebraska, Kansas, and the states of the Pacific coast. Cheap and level lands, machinery, the railroads, the elevator, and the "new process" made possible the enormous wheat field. Steam applied to gang plows enabled the farmer to prepare immense areas. The harvester and the steam thresher easily harvested and threshed all that could be raised. A heading machine could cut thirty to forty acres a day. Often a dozen machines would be put into a single field. As far as the eye could reach there would be a sea of waving wheat. On such a farm nothing else would be raised. In many cases the workers never saw butter or cheese, an egg, an apple, or any garden truck, except such as had been brought in from places miles away.

Capital. — New instruments and greatly enlarged markets had thus revolutionized the raising of wheat and made the large field the most profitable one. The average Western wheat farm, even without including the bonanza farms, became larger than those upon which a more diversified farming is conducted. The

great profits which were promised tempted large capital. Foreign syndicates frequently came into possession of domains equaling in extent some of the most lordly of the Old World. The profits also tempted men to break the law. Many millions of acres of the public lands — some of them in the best wheat districts — passed into the hands of individuals or corporations by corrupt manipulation of the Homestead or other land laws.



Courtesy of the Department of Agriculture

TWO-BOTTOM GANG PLOW BREAKING SOD

Here the horse or the steam engine again does the work of man

Cattle grazing.—The period between 1860 and 1885 saw also the rise of that great American industry which was to furnish much of the world with cheap meat for a third of a century — the grazing of cattle upon the vast Western ranges. In northern Mexico and in Texas there were thousands of rangy, long-horned cattle. These were the descendants of the herds which the Spaniards had brought into the country in the sixteenth century. In Texas the herding of these wild cattle on the grasses of the region had been for many years a thriving in-

dustry. The numbers increased so greatly, however, that the Southern ranges were able to take care of no more.

To the northward, reaching to the Canadian border and beyond, were vast regions covered with very nutritious grasses still unused. The possibilities of these Northern grazing lands were said to have been discovered by a traveler who had been caught by winter and who had turned his oxen loose, supposedly to starve or freeze. Instead of doing either, however, they



Courtesy of the Department of Agriculture

LARGE COMBINE AT WORK NEAR WALLA WALLA, WASH.

reappeared in the spring fat and contented, having subsisted upon the wild grasses which they found beneath the snow. Whether this story is true or not, during the 'sixties the cattlemen began to drive their herds from the South into the Northern districts. For forty years the cattle roamed in growing numbers freely over the Northwestern prairies. As these regions were outside the reach of the law, the men formed a rough code of their own. Men's rights as defined under this code were strictly guarded. Those who disobeyed the rough and ready measures were quickly dealt with.

As time went on cattle associations were organized which

drew up regulations binding upon all. One of these regulations required the registration of every man's cattle brand. As the cattle were turned loose on the ranges, those belonging to different men mingling together, it was necessary to have identification marks for them. These marks were burned upon the animal at the annual round-up in the spring. The associations were likewise instrumental in improving the breeds, the early longhorns being replaced, or mixed, with imported animals of better strain.

After about 1885 buyers from the corn states began to ship in the Western stock for feeding on their cheap corn. This was similar to the practice of the farmers of Indiana and Illinois in the early part of the century, who used to drive their animals into Ohio for fattening (p. 198). Thus many cattle that were formerly driven along the ranges were sent over the railroads to become the "corn feds" of Iowa or eastern Nebraska.

Here were the sources of the cheap beef with which this country and much of the rest of the world were fed from 1870 to 1895. Cheap cattle, costing fifteen to twenty dollars per head, were fattened for the market on grass as free as water, or upon Indian corn that would bring the farmer fifteen to twenty-five cents per bushel — corn that often paid better when used for fuel than when sold for cash.

Home markets and the development of intensive farming. — In our study of agriculture we have found one feature prominent and characteristic of all sections alike — the search for a money crop. Emphasis was laid not only upon the commodity that could be most easily produced, but upon the one that could be sold to the greatest advantage. This was the secret of cotton, rice, and sugar in the South; of wheat, corn, hogs, and cattle in the Northwest. With the exception of corn, which was turned into meat before being sold, all of these crops had world-wide markets, all would bear long transportation, and all could be raised cheaply on the frontier.

Intensive agriculture in the East. — The effect of city markets near at hand, however, was to encourage intensive agriculture.

This change, as we have seen (p. 238), took place first in the states of the Northeast. Because of the nearness to markets and the higher land values, more and more attention was paid to those commodities which were less able to stand long journeys, but for which high prices could be obtained in the cities.



Courtesy of the California Fruit Growers' Exchange

SMUDGE POTS AS A GUARD AGAINST FROST

When the Weather Bureau sends out a warning of dangerously low temperature, the fruit growers of Colorado or California start the smudge pots going. A dense pall of smoke is raised over the trees, thus protecting them from the frost—unless the cold is too intense.

New York, Philadelphia, Boston, and other urban centers reached farther and farther into the interior for their supplies of milk. Hence, dairying came to be of increasing importance in the Northeastern states. Butter and cheese making in factories began (1851–1861) and grew rapidly in importance, New York and Vermont becoming two of the most notable producers of these commodities. Around the cities in ever-widening areas the market gardens spread. Certain regions gave themselves

almost wholly to fruit growing. Western New York became famed for its grapes, and Delaware for its peaches. Among other specialties were the potatoes of Vermont and eastern Maine, and the tobacco and onions of the Connecticut Valley. Meantime, cereals became relatively of less and less importance



*Courtesy of the California Fruit Growers' Exchange
Photo by International Film Service*

KILLING THE SCALE

There are numerous kinds of scale insects which attack the deciduous fruit trees, the most notorious being the San José scale. In the picture tents are drawn over the trees and filled with hydrocyanic gas to kill the scale. The numbered tape on the tents indicates the cubic contents.

as a money crop. They continued to be produced, but to an increasing extent only as an animal fodder.

Intensive agriculture in the West. — The inducements which, between 1860 and 1885, led the farmers of the Northeastern states to diversify their production, in the next thirty years brought about like changes in other parts of the country. In the Middle West local markets of huge size grew up. With their growth cereals, hogs, and cattle ceased to be the only products salable at a profit. Land leaped upward in value, and

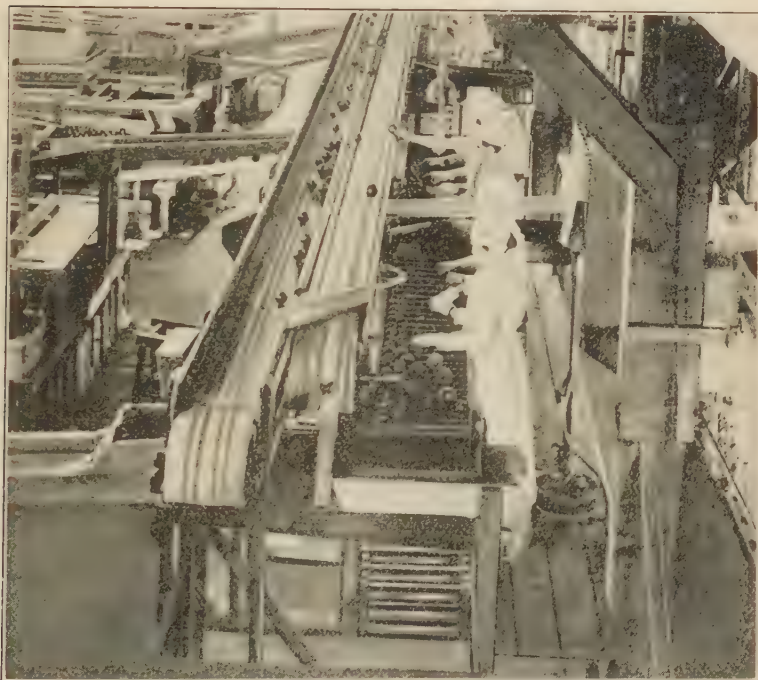
market gardens appeared around the growing cities. Milk farms, once almost unknown in the West, became more and more common. Butter making in factories grew into an industry well established and of large dimensions in Iowa, Illinois, Wisconsin, Minnesota, and Michigan. This industry was greatly stimulated by the discovery of the Babcock test for measuring the butter-fat content of milk and by the invention of the cream separator. Hence, the production of butter, milk, and cheese, poultry and eggs became the main business of thousands of farms where these had formerly been but despised and neglected by-products.

Transportation and the development of intensive farming. — While the growth of cities was extending the areas of diversified and intensive farming, other influences were having similar results. The railroad, combined with refrigeration, practically neutralized the effects of long distances to the markets upon perishable goods. They made, and are making, the whole world a market place for the market gardener, the dairyman, and the fruit, the vegetable, and the egg producer.

Perishable foods. — In order to understand the effects of these agencies, let us consider the growth of specialized, perishable food production in various parts of the country, remembering that, for the greater part, this is a development of the last thirty years. Within that period the apple industry of Washington and Oregon has grown up. Fruit production in California has also enormously increased. Most of the fruit of the Pacific coast is marketed far to the east of the Rocky Mountains, a large part reaching the Atlantic coast and going on even beyond the Atlantic. Moreover, it reaches these markets in as good condition, practically, as when it was shipped. This is due to quick transportation, to careful handling, and to refrigeration. Upon the same markets depends also the fruit — melons, peaches, and the like — from the irrigated farms of Colorado, most of which have been developed since 1885.

Southern agricultural changes. — These agencies are also helping to solve the agricultural problems of the South. Since

1895 there has been a growing interest in fruit raising, market gardening, and dairying in the Gulf and South Atlantic states. Within twenty-five years North Carolina, South Carolina, and Georgia have gone extensively into vegetable and fruit growing for Northern markets, and the latter now depend



Courtesy of the California Fruit Growers' Exchange
GRADING ORANGES

The oranges are run down gradually widening grooves which permit the fruit of uniform sizes to drop into canvas receptacles arranged underneath.

upon these sources for their early garden supplies. The first strawberries in the markets of the Northeastern states will almost certainly be found to have come from these sections. Likewise, the great Northern cities of the Mississippi Valley are being supplied more and more with the early vegetables and fruits of the Gulf states farther west.

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QUESTIONS

1. What were the causes of the rapid settlement of the West after the Civil War? Why was this settlement of special significance? Would there have been any advantage in having it settled more slowly?
2. What was the influence of the railroads in the development of the country west of the Mississippi and Missouri rivers? What were the character and the numbers of the immigrants of this period?
3. In what respects did inventions hasten the settlement of the last agricultural regions?
4. What is bonanza farming? Show how the natural conditions combined with inventions gave rise to this kind of farming. Show how the place of capital in modern farming has grown. What effect does the increased use of capital have on human labor in agriculture? Do there appear to you to be any disadvantages in the increasing importance of capital in comparison with labor in agriculture?
5. What was the origin of the Western longhorns? Locate and describe the Western grazing lands. What were some of the rules of the cattle men? Why was meat cheap between 1870 and 1900?
6. What has been the influence of the market upon the character of the agriculture of the United States? What is meant by intensive farming? Why, as a rule, has it always been possible to get better garden truck in

the cities than on the farms of the greatest agricultural regions? (Carver, *Principles*, 125-129.) Do you see anything in the development of agriculture after the Civil War which may explain why Eastern farmers were less radical in their sentiments than Western farmers were?

7. Describe the effects which the growth of industries and cities had upon agriculture in their vicinity. Show what influences quick railroad service and refrigeration have had in developing intensive farming and a greater variety of crops.

SUGGESTED QUESTION FOR DEBATE

1. Resolved that the superabundance of food products and of other natural resources developed between 1865 and 1895 induced a standard of living in the United States which cannot be maintained as the population increases.

CHAPTER XXVII

AGRICULTURE AS A SCIENCE AND AS A BUSINESS

- Introduction
- Influences resulting in a revolution in farming
- The national system of agricultural schools
 - The Morrill Act
 - Supplementary acts
- The Department of Agriculture
- Educational work of the first twenty-five years
- Experiment stations
 - Origin and history
 - County agents
 - Soil surveys
 - Boys' and girls' clubs
- Agricultural literature
- Bureau of Plant Industry
- Bureau of Animal Industry
- Business management
 - Farm investigations
 - Farmers' organizations
 - Coöperative societies
- Federal Farm Loan Associations
- Summary of the agricultural revolution
 - Machinery
 - Specialization
 - The end of the agricultural frontier
 - Social revolution in agriculture

Introduction. — Elsewhere we have noted a small production per acre and a rapid exhaustion of the fertility of the soil in American agriculture. While European lands were producing from twenty-five to thirty-five bushels of wheat per acre, ours were yielding from twelve to thirteen. Other contrasts are as striking. Although the soil of England actually increased in fertility during the past century, thousands of worn-out farms tell the tale of what has happened in the United States. The per-

acre production is not, to be sure, the most important measure of agricultural efficiency (p. 508), yet the contrast shows that we might, perhaps, learn something from Europe.

In the field of business organization, also, foreign nations have much to teach us. The little country of Denmark has made of itself practically a university of business agriculture. The government has recognized the importance of keeping the land in the hands of the people, and has taken intelligent measures to secure this end. It has established agricultural schools accessible to all. The farmers themselves have shown equal intelligence in organization along business lines. Hundreds of coöperative butter and cheese factories are run entirely by the farmers, and but a small part of these commodities is produced in any other way. The shipping and selling, moreover, are all done by their agents.

Influences resulting in a revolution in farming. — Abundant and cheap lands, however, came to an end about 1890. Land wasting ceased to yield profits, and it became necessary to make every acre produce more food. It is not surprising, then, to find our people during the last forty years devoting more and more attention to the questions of agricultural education and organization.

The national system of agricultural schools: *The Morrill Act.* — The first effective step toward agricultural education was taken in 1862, when Congress, stirred by the needs of the hour, and, perhaps, sensing future needs, passed the Homestead and Morrill acts. The importance of the former we have already considered (p. 467). The Morrill Act had for its purpose the spread of agricultural and mechanical education. It provided a gift to every state of thirty thousand acres of public land for each of its Congressmen, the proceeds to be used for the support of agricultural and technical schools. Upon this act were founded the state universities and agricultural colleges. While the lands were disposed of by many of the states with so little foresight as not at present to yield all that might have been expected, nevertheless the first steps toward scientific agriculture

were made. Every state now has its agricultural college. About half of these are departments of the state universities. Others are mixed agricultural and technical schools. Only a few are independent and purely agricultural. In the South there are also a number of industrial schools for negroes — such as Tuskegee Institute — which receive federal aid.

Supplementary acts. — Congress has enacted a number of supplementary measures since the land grant of 1862. Two acts, one passed in 1890 and the other in 1907, brought the annual appropriation for each state to fifty thousand dollars for the support of the colleges of agriculture and mechanic arts. The endowment realized, or to be realized, from the land grant of 1862 amounts to many millions annually, while the expenditures of the states themselves are now far in excess of the income received from all other sources.

The Department of Agriculture. — In 1862 Congress established a Department of Agriculture under the direction of a Commissioner. In 1889 it was placed on an equal footing with the other Departments in charge of a Secretary, who is a member of the Cabinet. The appropriation for the Department grew steadily from year to year, until in 1920 it reached the sum of thirty million dollars. There were then twenty thousand employees, the greater part of whom were at work in the different states of the Union, in outlying possessions, and in other parts of the world.

Educational work of the first twenty-five years. — It took a quarter of a century before the Department and the colleges really began to be of much benefit to actual farming. The courses of study offered at first were merely the literary courses of the ordinary college, with a little chemistry of soils and plants and some ordinary farm work on the college farm thrown in. Many boys dropped out because they thought they might as well do farm work at home as at college. In some universities a "chair" of agriculture was established. There was a professor of agriculture just as there was a professor of Latin or Greek. In short, the early ideas of agricultural education seemed

to be to produce farmers who were good judges of literature, but not necessarily of cattle, seeds, and soil.

Meanwhile the Department of Agriculture had established a Bureau of Entomology to attack the problem of insects injurious to plants, and from the first this Bureau did good work. The Department also issued reports on European systems of farming, and translated foreign articles of value. It started an experimental farm at Washington and had charge of the distribution of free seeds through the agency of the Congressmen.

Experiment stations: *Origin and history.* — By the middle of the 'eighties, however, it had become plain that if agricultural education was to be effective, the farmers everywhere must be reached. By this time the discovery had been made that the training of the schoolroom and the laboratory was not enough. The experience of twenty years had demonstrated that the real test of scientific theory must be made by actual farming on ordinary farms. Thus the idea of the experiment station began to take shape.

The first stations had been established by the states or by private institutions, Connecticut leading the way in 1875. During the following decade this example had been copied in some sixteen other states. The movement became a national one, however, when Congress in 1887 passed the Hatch Act providing for annual appropriations of fifteen thousand dollars — later increased to thirty thousand — for each state to use in experiment station work. Since that time stations working under the universities or agricultural colleges have been set up in every state in the Union. The year following the Hatch Act the Office of Experiment Stations was established in the Department of Agriculture. This office, in addition to doing much experimental work of its own, has general oversight of the work of all stations.

County agents. — Some of the most vital work in agricultural education is done through the experiment stations. They reach the actual farmer. By a law of 1914 they are enabled to send agents into every county to show the farmers how to prevent

diseases of animals and plants, how to select seed, how to drain, plow, or fertilize their lands, and how to meet a multitude of other problems. Experts lecture every year to hundreds of farmers' institutes on every conceivable phase of agriculture, and laboratory trains go into many sections, showing the results obtained from scientific methods.

Soil surveys. — The experiment stations, under the supervision of the federal Department, have been working for years on a survey of the soils of the country. Eventually every acre of soil will have been tested as to its physical characteristics. In addition, notes are made of atmospheric conditions, such as rainfall and temperature. Up to 1912 there had been found eight hundred different types of soil in the United States. By 1915 over one thousand counties or areas had been surveyed.

Boys' and girls' clubs. — Through this same office many boys' and girls' clubs have been formed for definite agricultural purposes. The objects of the clubs may be seen in their names, such as, the Boys' Corn Club, the Boys' Pig Club, and the Girls' Home Economics Club. This work has been carried on with special vigor in the South, although it is by no means limited to this section. Prizes are offered for the best showing in crop raising or other activities. Every contestant is required to follow instructions and to keep a careful account of all expenses. Some of the results have been astonishing. Oftentimes boys would raise from eighty to one hundred bushels of corn on an acre side by side with fields on which their fathers were raising from twenty-five to thirty bushels. This has proved to be one of the most effective ways of interesting the coming generations in agricultural work.

Agricultural literature. — The results of investigations made by the Department, the agricultural colleges, and the experi-



*Courtesy of the Department
of Agriculture*

THE BOYS' PIG CLUB
EMBLEM

ment stations are generally printed in *Farmers' Bulletins* and other publications. In order that all may know what has been done, the Department publishes either in full or in summary the important discoveries made in all fields. It is one of the greatest publishing houses in the world. In a single year it published nearly two thousand different bulletins and circulars, aggregating over twenty-seven million copies. In addition, it issued five hundred thousand copies of a Year Book of seven or eight hundred pages.

Bureau of Plant Industry. — Some of the most interesting investigations are made by the Bureau of Plant Industry. It has done especially notable work in the search for new plants. Its agents have gone in their investigations over the steppes, the deserts, and the mountains of Central Asia, amid the wilds of Siberia, through Japan, China, and the tropics. Equally interesting is the story of how some of the drought and cold resistant, but meagerly productive, plants thus found have been crossed with their more prolific relatives until there was evolved a hybrid that combined the virtues of both.

Bureau of Animal Industry. — The Bureau of Animal Industry has also done important work. In connection with scientists in the different state agricultural schools, it investigates every disease with which animals are afflicted. In order to understand what benefits may come from such work, let us follow in detail one of the most important achievements in suppressing animal diseases.

For a long time cattle raising in the Southern states had been struggling with a terrible and seemingly invincible enemy, the Texas fever. This disease, introduced into Mexico by the Spaniards, had spread into the Southern states. Summer shipments to the Northern markets of apparently healthy Texas cattle in the 'sixties and 'seventies had been followed all along the line of transportation by great losses of Northern stock from the fever. Moreover, when Northern stock was shipped south, from sixty to ninety per cent of it was sure to die. It was impossible, therefore, to improve the Southern breeds, although

they themselves were immune to the disease, and the stock remained poor and scrubby. The annual loss to the Southern farmers from this disease alone is variously estimated at from forty million to one hundred million dollars.

Early in the nineties, through the investigations of the experiment stations of Louisiana and Texas and of the Department of Agriculture, it was definitely proved that the cause of the fever was a tick, which fastened itself upon the animals and carried the germ of the disease from the infected to the healthy cattle. It was not long before science had found methods of combatting the pest. By means of a system of quarantine and of a prepared "dip" for the cattle, over five hundred thousand square miles of the South had been freed from the dread disease by 1920.

Beneficent results have already become evident. In 1913 a circular of questions was sent to many farmers in the districts treated. Almost every one reported improvement in weight, quality, purity of breed, and amount of milk, as well as an awakened interest in the question of fodder crops, ensilage, and similar matters. By complete eradication of the tick, not only will the meat problem become less menacing, but perhaps the Southern farmer may be freed from the vicious one-crop system which has always kept him at a disadvantage.

Business management. — Inseparably connected with a better method of soil tillage, crop production, and animal raising is the problem of better business methods. Few farmers have really known, for example, whether they were being paid for all their labor and expense; whether everything they did was bringing profit or loss. Within the past twenty-five years the Department of Agriculture, the colleges and experiment stations, as well as some farmers' associations, have been trying to teach business methods in agriculture. With this object in view, the Office of Farm Management was created in the Department of Agriculture. Already hundreds of farms in various parts of the country have been investigated and reported on.

Farm investigations. — The investigations aimed to disclose the most profitable size of farms, the best and most economical

use of machinery, and the relation between feeding and profits in milk and meat production. Efforts were made to reorganize farm systems, so as to distribute labor evenly the year round, thus eliminating the rush and the slack seasons. Farmers were encouraged to keep records and were taught bookkeeping systems. Studies of successful farms were made, and reports on them sent out. In short, the aim is to enable the farmer to get the utmost out of his capital and his labor supply.

Farmers' organizations. — Meantime the farmers themselves have not been idle. One of their greatest disadvantages has clearly been lack of organization, due to their isolation. This condition, however, as we have seen elsewhere, has fast disappeared. The result has been that farmers' organizations have increased enormously in numbers and effectiveness in the last quarter of a century. Agricultural fairs, started early in the nineteenth century, have been continued. State agricultural societies have grown in numbers. Many scores of breeders' associations, both state and national, have been formed since the Civil War, and these have stimulated the production of pure breeds of cattle, horses, sheep, and hogs. Special studies of feeding for fattening and for milk production have been made. National exhibits of fat cattle are held, and prizes are awarded for the most economical records in fattening. The result has been a decided decrease in the average age at which cattle are put upon the market.

Coöperative societies. — In addition to profiting by such organizations as those just described, farmers have turned more and more to coöperation. The main objects of coöperative societies are to secure control of markets and to perform the middleman's service. For example, they often run their own stores and sell directly through their agents.

Elsewhere (p. 416) we have described in connection with another subject the grain elevator coöperative societies. Among others which have become most common are fruit-growers' exchanges and dairy societies. Within the past twenty-five years certain states of the Middle West have developed great dairy



CALIFORNIA ORANGE GROVE

interests. Especially prominent among these states are Wisconsin, Illinois, Iowa, and Minnesota. Within them many hundreds of butter factories have recently been established, a large majority of which are run by the farmers themselves. An expert is hired to manage the factory. The milk is collected from the farm daily and is tested for the butter fats, on the basis of which payment is made. Close watch is kept upon the larger markets to secure the best prices. In many cases a particular brand of butter gains such a high reputation that it is always in demand and brings top prices even in the large markets of the Atlantic coast.

It is not only the elimination of middlemen's profits that is secured by the coöperative dairies. By paying only for the amount of butter fats, the factory influences the farmer to improve the grade of his herd. Cows that give thin milk are replaced by those that give much cream.

The strongest and most effective of coöperative associations in the United States is the California Fruit Growers' Exchange. This central body has general supervision over the district associations into which the state is divided. The district exchanges are each made up of many local associations. Strict regulations control the manner of handling and grading fruit. In this way none but the most perfect leaves the state, and the growers are induced to use great care in cultivation. The central exchange has agents and warehouses in all the large markets of the country, makes freight and refrigeration agreements with the transportation companies, and conducts widespread advertising campaigns. Through this powerful body many of the abuses of which the Western fruit growers complained, such as overcharging for freight, discriminations, fraudulent practices on the part of brokers and other middlemen, have disappeared. The producers have become, not merely farmers, who take what others offer, but business men as well, who, by personal supervision, look out for their own interests. Many other such associations have been formed since the Californians demonstrated what could be done. Most of the fruit of the Pa-

cific Coast and Rocky Mountain states is now raised and marketed under coöperative regulation. Similar organizations are also spreading among the farmers of the South. The growth of the coöperative movement is indicated by the fact that in 1919 farmers' associations made sales of over seven hundred and twenty million dollars' worth of farm products and purchased nearly eighty-five million dollars' worth of supplies.

The sudden decline in the prices of farm products after the Great War and the resultant hard times among the farmers gave still further impetus to the farmers' marketing idea. The American Farm Bureau Federation, organized in 1918, aims to take somewhat the same relation to farmers' organizations as that held by the American Federation of Labor to labor organizations. Within three years its membership has grown to a million and a half. It furnishes plans for farmers' associations, and under its leadership, together with the backing of other agencies, such as the Grange, there was established in April, 1921, the United States Grain Growers, Incorporated. The purpose of the organization is to get rid of middlemen and grain speculators through a national system of farmer-owned elevators and warehouses, farmer-owned sales and export corporations, and farmer-owned finance corporations. Farmers everywhere are being urged to join the organization. For financing the elevators, warehouses, sales, and exports, the Farmers' Finance Corporation was formed with a capital of a hundred million dollars. While the grain growers' organization is the largest yet launched, it is planned to extend the scope of operations until there is brought into the farmers' own hands the marketing of all the products of the soil.

Federal Farm Loan Associations. — One of the handicaps under which the modern farmer labors is the difficulty of borrowing money to finance his agricultural operations. The need of capital has grown as the price of land, equipment, and labor increased. Capitalists, however, have not been attracted by farm mortgages, because farmers often require long-time notes, because they cannot always pay the interest promptly, and

because they often wish to pay off the principal in small installments. Farmers, therefore, have always found it difficult to finance their projects.

In an attempt to remedy this situation, Congress, in 1916, passed the Federal Farm Loan Act. The act established a Federal Farm Loan Board of five members, four appointed by the President. The country was divided into twelve districts, in each of which the Board might charter a land bank, to the capital of which any person or firm might subscribe, the federal government taking the balance thirty days after the subscription books were opened. Within the districts associations of ten or more farmers might be formed. Only those who wished to borrow on land which they intended to cultivate might be members of the association, and each member must subscribe for one share, five dollars, of land-bank stock for every one hundred dollars borrowed. This subscription was to serve as security for bad debts. When the land bank receives the subscription, it charts the association and delivers to it the sums desired by the borrowers, the cash being raised by the issuance of bonds. Repayments are made at stated intervals in such amounts as to take care of the interest and also the principal in from five to forty years.

Summary of the agricultural revolution: *Machinery.* — Beginning early in the nineteenth century, machinery, slowly at first and then very rapidly, took over the work once performed by hand. The clearing of the land, the planting and cultivating of the soil, and the harvesting of the crops had by 1860 become largely the task of the machine. Since then uninterrupted additions have been made to the devices relieving men of the hardest part of agricultural labor, and at the same time enabling them to cultivate larger and larger areas.

Specialization. — Along with the revolution by machinery there has been a constant change in the character of the farmer. The rural jack-at-all-trades has been transformed into the specialist. Not only has the farmer given up building his own houses and barns, making his clothing and tools, his soap and

candles, and preparing his smoked and salted meats and dried fruits, but he has also abandoned many lines of work which are purely agricultural. Instead of being a general farmer, he confines himself to certain special phases of agriculture, such as fruit growing, cattle raising, wheat farming, dairying, or poultry raising. This development, already well along in the thickly settled regions, is one that is constantly being extended.

The end of the agricultural frontier. — More and more, science and business principles are being tested out on the farm. No longer does a man raise certain crops in a fixed way merely because it was the way of his father and grandfather. Land waste, too, has come to appear much like a crime against humanity, partly because it has become an offense to the pocketbook. It now pays to take trouble to save the land. In fact, we have here the pivot on which turns the whole revolution in agriculture. The change from the jack-at-all-trades to the specialist, from haphazard methods to those of the man of business, from the rule of thumb to scientific principles — all these were made obligatory by the occupation of the last of the great areas which could be easily and inexpensively turned into farms. The whole agricultural revolution thus boils down to the question of what kind of farming pays best.

Social revolution in agriculture. — Last, and perhaps greatest of all, there has come a complete change in the outlook of the farmer from a social standpoint. The farm as a home has become more and more attractive. The lure of the land and the lack of hope at home induced millions to seek the hardships of the frontier. In real frontier life, in spite of its hardships and its isolation, there was an excitement and a charm that proved irresistible to many brave men and women. For a large number of communities, however, there always has been a time when farming was a drudgery and little else. This time was a sort of midway period after the frontier had moved on and before the community had become linked up with the better settled regions. The charm of the frontier had gone. Nothing remained but deadly isolation and hard work. It was under such cir-

cumstances that boys and girls by the thousand left the farm for the city.

Gradually, however, the last fifty years have brought a revolution in this respect as well. The telephone is reaching greater and greater numbers of farm houses. The automobile has brought the city and village within easy reach. Little by little a network of good roads is spreading all over the country. For this the automobile deserves many thanks. The railroad has likewise done its part toward the breaking down of isolation. Villages have become larger and have taken on more and more of the cosmopolitan air. It is seldom necessary, for example, for a farmer to take long, expensive trips to see a good play, or to hear fine music, or to visit the "movies." Last, but not least, machinery has taken over the hardest part of farm work. From a social standpoint, the reasons are becoming fewer and fewer for leaving the farm in order to get a taste of life where there are people.

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QUESTIONS

1. Can you give any explanation of the small per-capita production on the farms of the United States? Why were American farmers slow to organize? What were the causes of the revolution in agricultural methods which have taken place since about 1890?

2. What were the provisions of the Homestead and Morrill acts? What other provision has been made by Congress for agricultural colleges? Describe the growth of the Department of Agriculture.

3. What was the character of agricultural education immediately after the Civil War? What advances have been made in this respect?

4. From what educational needs did experiment stations originate? Give an account of the development of the experiment stations. Give an account of the kinds of work done by the stations. What is the value of boys' and girls' clubs?

5. How are the people informed of the work done to advance agriculture? Do you think that the work of the Department of Agriculture is always done in a strictly business-like manner?

6. Describe the work of the Bureaus of Plant and Animal Industry. In what way has the Bureau of Animal Industry been of service to Southern agriculture?

7. Can you see any reasons why the ordinary American farmers have paid but little attention to the business side of farming? In your studies thus far have you noted any kind of farming which resembles big business

organizations? What effects on prices to the consumer will running farms on business principles have?

8. What is the work of the Office of Farm Management? How have farmers' organizations increased business efficiency on the farm?

9. What are the objects of coöperative agricultural societies? Describe the work of fruit-growers' exchanges and coöperative dairy societies. In what ways do such organizations secure products of better quality? Describe the organization and work of the California Fruit Growers' Exchange. Is there any likelihood of farmers' organizations becoming monopolies?

10. Why is there greater need of capital in agriculture now than in the first half of the eighteenth century? Why do farmers find difficulty in securing capital?

11. Summarize the revolution in agriculture from colonial to modern methods. What resemblances, if any, can you see between the changes made in farming during the last century and the changes in other pursuits?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that in proportion to the aid given to manufactures and commerce by the federal and state governments during the last fifty years, the aid given to farming has been inadequate.

2. Resolved that the antitrust laws should apply to farmers' organizations as well as to commercial and industrial organizations.

CHAPTER XXVIII

RURAL PROBLEMS SINCE 1890

- The farmer's day
- Increase of land values
- The food problem
 - Increasing proportion of nonagricultural people
 - Relative decline of food production
 - Encroachment of population upon the means of subsistence
- The problem of land and labor
 - Effects of rising land values
 - Land tenancy
 - Tenancy as a step to ownership
 - Agricultural labor
 - The growth of a shifting population
 - Tenancy and land conservation
 - Counter-migrations and retired farmers
 - Emigration to the Canadian Northwest
- The immigrant and agriculture
- The small versus the large farm
- The negroes of the South a tenant class
 - The change from slavery to tenancy
 - Cotton raising perpetuated by the tenant system
 - Effect of the tenant system on the negroes
 - Effect of the tenant system on the soil
- Artificial means of increasing available lands
 - Drainage
 - Irrigation
 - Federal aids to irrigation
 - Dry farming and drought-resistant plants

The farmer's day. — Early in the decade from 1890 to 1900 a writer entitled one of his articles "The Farmer on Top."¹ When agricultural depression was at its height and while farmers' parties of protest were still strong, he ventured to predict that we had nearly reached the turning of the tide. In a few

¹ *North American Review*, July, 1891.

years, he said in substance, the price of farm produce would begin to rise, would continue upward, and an era of prosperity for the farmer hitherto undreamed of would ensue.

Increase of land values. — The foundation of this prediction was the closing of the frontier upon the unproductive arid region. Prices had hitherto been low because land had been abundant and free. By 1890 land had ceased to be abundant. New farmers had, henceforth, to pay for their land. As population and the consequent demand for land continued to increase, the prices in the great agricultural regions bounded upward at an ever-accelerating rate, gradually putting an end to cheap agricultural production.

The food problem. — About the dawn of the twentieth century the world began to worry about its future food supply. Writers among the industrial nations of Europe that produced less than they consumed warned of an impending deficiency.

The increasing proportion of nonagricultural people. — Since about 1898 the facts have borne out the prophecies of scarcity and higher prices. In the United States food production, which up to 1895 had gained rapidly upon the population, began to be overtaken in the race. Throughout the nineteenth century the nonagricultural population had increased more rapidly than the agricultural. After 1865 the capital invested in industrial undertakings and the number of people employed in them rapidly overhauled agricultural investments and population. In 1850 the agricultural wealth of the country was fifty-six per cent of the total, in 1860 forty-nine per cent, and in 1890 twenty-five per cent.

Meanwhile the population of the cities was gaining as surely, although more slowly. Between 1880 and 1890 the rural population increased fourteen per cent, the urban fifty-four per cent. In 1880 the population of cities of more than fifty thousand inhabitants was eighteen per cent of the total; by 1890 it was twenty-two per cent. After 1870, of all the people over ten years of age engaged in gainful pursuits, the percentage that was agricultural decreased as follows:

YEAR	PERCENTAGE IN AGRICULTURE	YEAR	PERCENTAGE IN AGRICULTURE
1870	47.36	1900	35.70
1880	44.40	1910	32.90
1890	39.20		

During the last decade (1910-1920) the movement from country to city has been, perhaps, more rapid than ever. For the first time in our history the census of 1920 shows the population in towns of twenty-five hundred and over to be over fifty per cent of the total.

Relative decline of food production. — The number of acres under cultivation and the production declined as did the rural population. In 1880 there were five and seven-tenths acres per capita in improved lands in the farms of the United States; in 1910, five and two-tenths; and in 1920, four and eight-tenths acres. During the five years from 1880 to 1884 inclusive, the average wheat crop per annum was 463,971,000 bushels. For the period 1905 to 1909 it was 692,823,000 bushels, an increase of forty-nine per cent. The population had in the meantime increased by some eighty-six per cent. Exports of wheat tell the same tale, the average annual export of this cereal during the earlier period being 140,025,953 bushels, and for the latter 113,000,000 bushels.

A similar story is true of the production of animals. After 1900 there was a gradual decline in the number of cattle and hogs. This was due in part to the encroachment of the enclosed farms upon the cattle ranges and in part to the increased cost of feeding the stock. After the beginning of the Great War, however, there was a rapid increase in the production of cattle and hogs.

Encroachment of population upon the means of subsistence. — By 1880 most of the "ready made" agricultural lands were gone. Yet the flood of people kept pouring in, rising to greater and greater heights, ready to burst through any barrier that

might be opened. How great the pressure became within ten years may be shown by reference to the opening up of Oklahoma.

This state up to 1889 had formed part of the Indian Territory, from which white settlement was barred. In this year, however, part of the territory was opened for settlement. All other states had been settled gradually because people had overflowed into them when the slightest degree of pressure began



OKLAHOMA FOUR WEEKS AFTER THE OPENING

to be felt in the better settled districts. By 1889 the flood had been dammed up for a number of years. When the day came for the opening, thousands of people — on foot, on horseback, in carriages, wagons, and prairie schooners — lined the borders, and there was a grand rush to seize upon the best portions of the soil as soon as the moment for crossing arrived. This land without population in the morning had thousands of bona fide home builders within its borders by night.

The relief afforded by the opening of Oklahoma lasted but for a moment. The flood began at once to rise again, and ever

since its pressure has become greater. As we have already intimated, this pressure had important results in bringing on increases in prices of land and produce. It has had other results of serious nature. Among them one of the most perplexing is the question of how to supply with land all who want it.

The problem of land and labor: *Rising land values.* — Between 1880 and 1910 land values advanced more than one hundred per cent in every part of the country outside of New England and the Middle Atlantic states. By far the greater part of this advance has occurred since 1900. In many sections of the country, notably the Western and North Central, the increase has been many times a hundred per cent. During each of three of the six decades between 1850 and 1910 the land of Iowa and Minnesota increased in value over one hundred per cent, and over fifty per cent in each of the other three. Prairie lands of the West and the Middle West grew most rapidly in favor. Such land in those states most sparsely settled, worth from five to ten dollars an acre in 1890, sold for twenty-five dollars by 1894, fifty dollars by 1900, and for from one hundred to two hundred dollars by 1905.

Such a rapid climb in the value of land was little short of a revolution. It brought joy to the speculator and the landowner. But more and more difficult became the problem of the new arrivals and the new generations who had no land.

Land tenancy. — States where there had been notable increases of land values have almost invariably had increases in the number of farms cultivated by tenants. Between 1880 and 1890 in Ohio, Indiana, and Illinois, twenty-two thousand three hundred owners ceased to work their farms, which were put in the hands of tenants. In Iowa the percentage of farms worked by tenants in 1880 was twenty-three and eight-tenths; in 1910 it was thirty-seven and eight-tenths; and in 1920 it had reached nearly forty-two per cent. Tenancy has been an invariable companion to the rising price of land.

In the first place, where land began to rise speculators bought farms. The result was that in such states as Iowa not only

are fewer owners working their farms, but fewer men own the land. In the second place, when land advanced to a certain point many a farmer retired and let his farm out to a tenant. In the third place, it became more and more difficult for one starting out in life to buy land since it had risen to an abnormal price. Men who in former days would have moved west have, therefore, been compelled to farm the land of someone else. In the South other causes to be considered later have brought even greater changes in this regard.

INCREASE OF TENANCY IN THE UNITED STATES, 1880-1920
(PER CENT)

	1880	1890	1900	1910	1920 ¹
North Atlantic States	16.0	18.4	20.8	18.2	17.1
South Atlantic States	36.1	38.5	44.2	45.9	46.7
North Central States	20.5	33.4	27.9	28.9	31.2
South Central States	36.2	38.5	48.6	51.7	51.2
Western States	14.0	12.1	16.6	14.1	17.7
United States	25.5	28.4	35.3	37.0	38.1

Tenancy as a step to ownership. — Before the great rise in land values after the opening of the twentieth century, tenancy was frequently but one of the steps to ownership. Many a young man, beginning as a farm laborer, after a few years rented a farm, and within a short time bought some acres for himself. A writer in the *Political Science Quarterly* declared in 1896 that one out of every nine tenants in Minnesota became an owner every year. The rise in the value of land, however, has made this process more difficult. The capital required to start in the business of farming is becoming every year a greater obstacle in the way of the man who has little or nothing to begin with. At the present time, therefore, we face the question whether or not the United States is to become Europeanized, — whether it is to become a land of lords and tenants.

Agricultural labor. — The opening years of the twentieth century have witnessed the growth of a distinct white farm-laboring class. This is the result of high-priced land, the movement of

¹ Census 1920, *Preliminary Report*.

farmers and farmer boys to the cities, the concentration of land-holdings, and specialization in agriculture. High-priced lands prevent laborers, too, from easily becoming owners, so that a greater number remain laborers permanently. Since land-owners and their sons to a less and less degree do their own work, they must hire it done in a correspondingly greater degree. Moreover, specialization has resulted in seasonal demands for labor. The wheat fields of Kansas, for example, demand some twenty-five thousand extra workers during the harvesting season. Hop-picking and bean-harvesting time in California are other examples of the seasonal demands. There has consequently grown up a considerable number of shifting farm workers — men who travel from state to state as the demand draws them. Large crowds follow the wheat harvest from Texas in the spring to Manitoba in August.

Within recent years the problem of agricultural labor has everywhere become most critical. More and more the difficulty of becoming an independent farmer, and the greater social and financial inducements of urban industrial life have drawn men from the farms to the cities. Hence, the problem is becoming for the whole country what it has been for many years in New England — the problem of competition for men between the farm with its long hours, its loneliness, and its relatively poor pay, and the city with its shorter and shorter hours, its social intercourse, and its increasing financial rewards for labor. The abandoned New England farm tells the result of the struggle there. The country may well take heed of this warning.

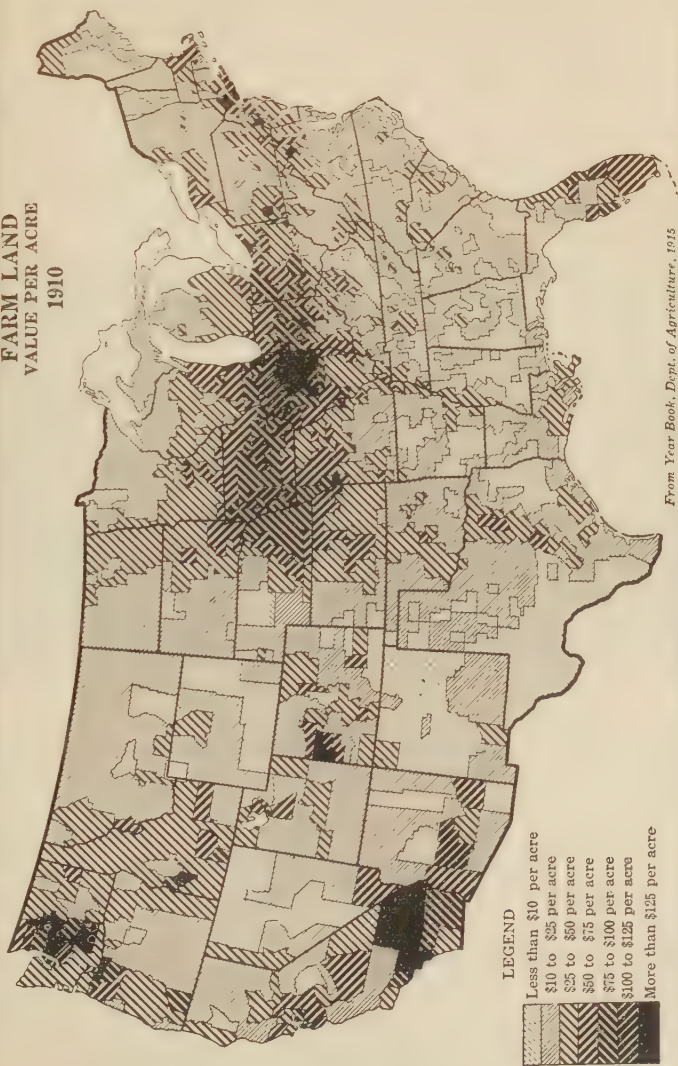
The growth of a shifting population. — The constantly growing class of people who own nothing is one of the most serious problems arising from the increase of land values. In this class are to be found those who have no stake in the nation — a restless, shifting population. This shifting multitude, be it noted, are movers of a sort entirely different from the masses we have watched as they followed the frontier farther and farther into the West. The frontiersman was inspired by high hope in his

breast; the modern shifters move because they have no reason for settling down — no hope where they are, no hope, on the other hand, in the place to which they are going. Within these groups are a large part of those who, out of discontent, are ready for any revolutionary program, no matter how destructive it may be.

Tenancy and land conservation. — We have often noted how great is the need of conservation of the natural resources. Tenancy as practiced in the United States, however, is likely to lead to the destruction of the farm. Having no interest in the soil, the buildings, or the live stock, the tenant's chief aim is to get a year's subsistence for himself. The soil is, therefore, made to give up its riches without return, and the buildings are allowed to go to ruin. Already has the shifting tenant left his mark upon many a farm once well kept. Only in case there can be devised a system in which the tenant has as great an interest in the upkeep of the farm as does the owner, will the evils of the condition now threatening ever be remedied. The present methods are but a continuation of the old land-mining system which we have seen resulting from a population constantly shifting westward to fresher lands.

Counter-migrations and retired farmers. — One other result of the failure of the land supply has been a migratory movement from the West to the East. Many farmers, instead of retiring or going to the city, have gone East, attracted by cheaper lands. Between 1880 and 1890 declines in farm land values took place in Ohio, Pennsylvania, New York, New Jersey, and all New England, and the following decade the values in these states were almost stationary. Between 1860 and 1890 a hundred Connecticut towns lost an aggregate of nineteen million dollars in assessed valuation, while the depreciation in New York State up to the year 1895 was estimated to have been fifty per cent. In Ohio the tax valuations for 1890 were from fifteen to twenty per cent less than they had been in 1880. As a consequence, many small farmers in Indiana and Illinois sold their farms and moved eastward to the cheaper lands.

FARM LAND
VALUE PER ACRE
1910



From Year Book, Dept. of Agriculture, 1915

Emigration to the Canadian Northwest. — During the last twenty years the western provinces of Canada have been made accessible by the railroads. Vast areas of fine wheat land were thus opened to the world. These regions have lately played the rôle of agricultural frontier. Into them many thousands of American farmers have moved from the high-priced lands



Courtesy of the Department of Agriculture

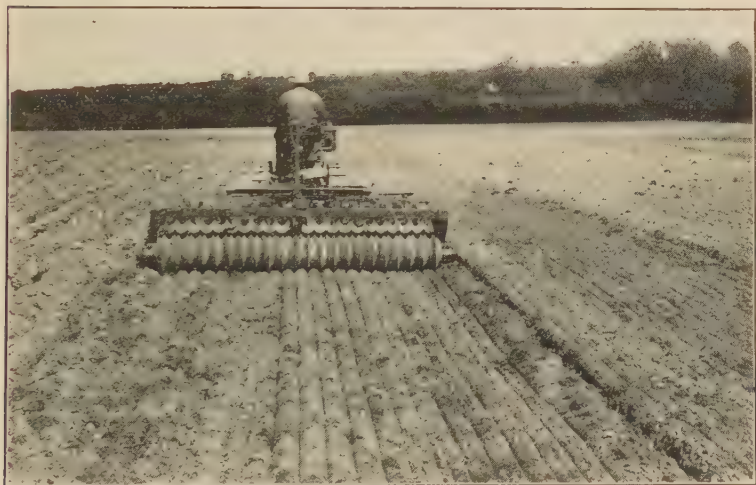
PLOWING THREE FURROWS WITH ONE TRACTOR

The gasoline-driven tractor has lately brought its assistance to the farmer and his horse. Machinery makes the large farm profitable and prevents peasantry in America.

in the States. For twenty years after 1890 some of the Middle Western states did not increase their rural population. Iowa, possessing no large cities, was at a standstill during all that time.

The immigrant and agriculture. — The more recent immigrant has, as a rule, crowded into the cities, yet since the beginning of the twentieth century many have gone in little groups into the country, and there have engaged in agriculture. In this occupation they almost invariably succeed, and often in the

course of a few years become the prosperous members of the community. To a large extent this can be explained by the willingness of the newcomers — whole families from little children up — to work long hours, to save, to live on little, and, in general, to endure a standard of living distinctly below that of the old-time American. Some see in this development a new menace. They argue that Europeans and Asiatics will settle



Courtesy of the Cleveland Tractor Company

HARROWING BY TRACTOR

upon the land, and, owing to their lower standards, will drive out the native American. The final result will be the establishment of a sort of medieval serfdom, or an agricultural peonage on the lands of America. It is certain, as Professor Carver points out, that if Americans hope to compete with the foreigner and still maintain a superior standard of living, they must do better farming than the foreigner. Better business methods, better use of machinery and power, better systems of marketing — these may enable the American farmer to prosper alongside his harder working foreign neighbor. Other-

wise those who work harder and live more thriftily will drive out those who work less hard and live more expensively.

The small versus the large farm. — It is frequently suggested that smaller farms distributed among more people would solve, temporarily at least, much of the problem of the landless. The proponents of this idea would have smaller farms, cultivated intensively, so as to make them yield approximately what a larger number of acres now yield. The chief support of their contention is the contrast in yields per acre (p. 481) between American and European farms.

There is another side to the question of productiveness, however, and that is the yield per man. Investigations of the



Courtesy of the Cleveland Tractor Company

HARVESTING BY TRACTOR

Department of Agriculture have shown that in this respect the best agricultural regions of the United States surpass the best of Europe about as much as the latter outdistances America in yield per acre. One man on a fairly large American farm worked by machinery produces far more than one man on a small European farm worked by hand. Many investigations have shown that the small farm worked by machinery does not yield as great a return for a farmer's labor as the large farm does. The Europeans, therefore, can make but little use of machines. Their small farms produce so much per acre because those who live upon them work so hard. Getting twenty-eight or thirty bushels of wheat per acre has required a

life of practical serfdom on the part of the men, women, and children. In the light of these facts, the solution of the land problem by means of the small farm would not at all appeal to Americans. It would seem to them too much like exchanging the manhood and womanhood of the nation for thirty bushels of wheat per acre.

The negroes of the South a tenant class. — In the South the slave system was replaced after the war by the tenant system. Here we find a tenant class — a large group whose economic



Courtesy of the Cleveland Tractor Company

HAULING HAY BY TRACTOR

and social condition is fixed for a long time to come. Throughout the cotton belt over half the farms are in the hands of tenants, most of whom are negroes. In some cotton counties of Mississippi ninety per cent of the farms are worked by tenants and ninety per cent of the farmers are negroes.

The change from slavery to tenancy. — When the war ended, the fortunes of the plantation owners were gone. There was, moreover, the whole negro population for whom some manner of living had to be provided. The result was the breaking up of many of the plantations into small farms, which were rented to the former slaves.

In the course of a few years three methods of rent payment

were established. There was the fixed-payment system, in which a certain money or crop payment was made by the tenant. In such cases the landlords were often absentees and took little or no interest in the conduct of the farming. This very common form of agreement was destructive to the land. Sometimes the landlord furnished tools, and, perhaps, a mule, besides the land, while the tenant supplied practically nothing except the labor.



Courtesy of the Department of Agriculture

A RELIC OF A DISAPPEARING ERA IN THE SOUTH. BREAKING THE LAND WITH ONE STEER.

The crop division in this case was usually half and half. By a third system the mule, the seed, and the tools were furnished by the tenant, the landlord receiving one-third of the corn and one-fourth of the cotton. Under the last two methods the landlord was likely to keep a better watch upon the cultivation, as he would be interested in securing good crops.

Cotton raising perpetuated by the tenant system. — Under such arrangements cotton and corn — the two chief crops of the South — have been raised for over half a century. Cotton,

as before the war, has been dominant. The negro had been trained in cotton raising and was not readily taught new ideas. Furthermore, for a long time there was no one to teach him how to vary his crops.

In the second place, cotton has continued to be, as it was before the war, the money crop of the South. The farmer knew that he could get a return in money for his cotton crop, and he was



Courtesy of the Department of Agriculture

TOOLS USED IN THE CULTIVATION OF COTTON AND CORN

not so sure about others. Cattle raising has always been hindered by the Texas fever, and, until recently, through lack of organization for marketing, full advantage has not been taken of the capabilities of the region for the production of vegetables and fruit. The cotton belt of the days before the war, therefore, continued with little variation to be the cotton belt for forty years thereafter. Throughout much of the South the same one-crop system that had already had such disastrous effects was continued. Tradition, the training of the laborers, the market

conditions, and the Texas fever combined to preserve the old agriculture. On a large proportion of the farms of the South the tenants still continue to buy much of their food supply. On a still larger number animal manure is practically never used.

Effect of the tenant system on the negroes. — In the case of the negro the buying of supplies was particularly demoralizing. Having no capital to start with, he would have to get his year's supplies from his landlord, or more probably still, from a vil-

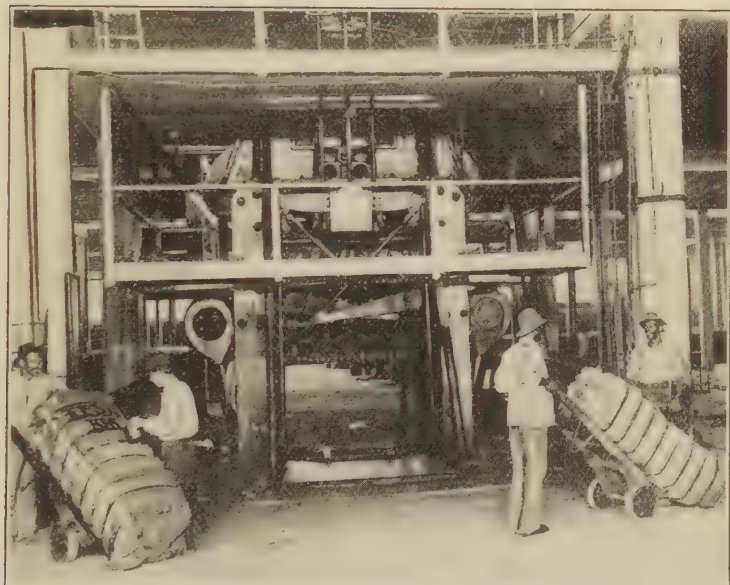


Courtesy of the Department of Agriculture

A SCENE IN SOUTH CAROLINA, ILLUSTRATING THE METHODS OF PLANTING COTTON

lage storekeeper. In return, he would pledge the crop, which he had not yet planted. As the surest crop was cotton, the creditor insisted that it be the main staple cultivated. Even if the tenant had desired to raise his own food supply, therefore, he would have been prevented from doing so by the demands of his creditor. In thousands of cases bondage to the old master was merely exchanged for bondage to the creditor. The business of "merchandizing" became one of the most profitable and common of enterprises. The profits ranged from twenty-five to one hundred per cent. A negro thus aptly described conditions: "Boss, some cuts de nigger too close to de bone,

but dey all gash him a little."¹ The credit system has not only helped to perpetuate the vicious one-crop method of agriculture, but it also has helped to continue the degradation of a large part of the farming population. However, the negro, naturally improvident, is too likely to care but little. It is no



Courtesy of the New Orleans Association of Commerce

COTTON COMPRESS

This machine reduces the cotton to a density of thirty-three pounds to the cubic foot, thus securing a twenty per cent reduction in freight rates.

uncommon occurrence for him, after having secured enough of his cotton crop to pay for his year's supplies, to leave the remainder to waste in the fields.

Effect of the tenant system on the soil. — The result of all this has been a continuance of that soil wastage which we found to be going on so rapidly before the war. Fields have been cropped with cotton, or perhaps corn, year after year until their natural

¹ Quoted by L. C. Gray in *Annals of the American Academy*, XL, 96.

fertility is quite gone. There are instances of thirty cotton crops' having been grown on the same field without change. As a consequence much of the good land has been reduced to a point where not over one-sixth of a bale per acre can be produced, that is, not much over one-sixth of what a good crop should be. Since the opening of the twentieth century strong efforts have



Courtesy of the New Orleans Association of Commerce

WEIGHING COTTON IN NEW ORLEANS

been made to change the whole agricultural system of the South. As we have seen in another place, much has been accomplished. There remains, however, a great deal still to be done.

Artificial means of increasing available lands. — Since about 1890 more and more attention has been given to the problem of making available for use lands which the first waves of settlers passed by. For these early enthusiasts some lands were too wet, some too dry. It is estimated that there are seventy-nine

million acres of land within the United States at present unavailable because of too much water. Most of these lands can be brought under cultivation by proper drainage. There are also seven hundred and fifty million acres that are too dry for ordinary cultivation. Perhaps fifty million of these may be reclaimed by irrigation.

Drainage. — Although considerable amounts of swamp land have been reclaimed by individual efforts, but little of this work has been done by organized companies or by the state and national governments. Since 1890, however, more and more attention has been given to irrigation.

Irrigation. — The Mormons, who in 1847 had made their permanent stopping place at Great Salt Lake, in Utah, are said to have been the first American pioneers to practice irrigation. Later, disappointed seekers for gold in the mining camps of California and then of Colorado began to raise vegetables for the miners. In both states irrigation was necessary. In 1870 an agricultural colony, the origin of the present town of Greeley, Colorado, was established, and was wholly dependent upon a coöperative system of irrigation. Between 1880 and 1890 private companies began to put under irrigation the dry lands of the Western states. By 1890 somewhat over three million acres had been reclaimed.

Federal aids to irrigation. — Up to this time the United States government had done little except to appoint agents to investigate the question in some of the irrigable regions. In the middle 'nineties the Carey Act was passed, offering one million acres of public lands to any state that would see to the development of the gift, but little was accomplished under this act. In 1902 Congress passed the Reclamation Act, providing for the construction by the federal government of irrigation works in the Rocky Mountain regions. The work was to be paid for from the sale of lands made available. The government was to build the reservoirs and furnish the water at established rates, using the income from this source and from the sale of the lands for the construction of other works.



*Courtesy of the Los Angeles Chamber of Commerce
Photo by the Black-D Photo Service Company, Los Angeles*

IRRIGATION "HEAD" AND DITCHES

Under this act several large projects have been completed, and millions of acres have been opened to settlement. Up to 1914 various estimates place the total amount of land reclaimed by irrigation at from twelve to fifteen million acres.

Dry farming and drought-resistant plants. — During the last twenty years the government, in connection with state agricultural schools, has tried with some success to make available the semiarid portions of the West which lack water for irrigation. There is a wide belt running north and south, including parts of Texas, Kansas, Nebraska, Colorado, Wyoming, and Montana, in which there is some rainfall, but not enough for ordinary farming. Here many farms have been run successfully under a system known as "dry farming." This system is based on the principle that if the surface soil is kept loose, the moisture in the subsoil will evaporate much more slowly. By allowing a field to stand idle and to accumulate moisture for a year, during which time the surface is constantly worked, it will be possible to produce a crop the following year. This system requires a farm of double the ordinary size, since half of it must remain idle all the time while it is storing up moisture. One of the greatest difficulties encountered in dry farming is to keep the "mulch," as the loosened surface soil is called, from blowing away in the strong winds that often prevail in these regions.

In other ways more or less successful, efforts have been made to push the agricultural frontier farther into the desert. Many drought-resistant plants have been introduced from foreign lands, chiefly Asia and Africa. Durum wheat, secured from Siberia, is said to have extended the wheat frontier fifty miles farther west.

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QUESTIONS

1. What was the basis of the prediction that farm produce would begin to rise in price after the end of the nineteenth century?
2. Do you see any reasons to suppose that the world's population will increase less rapidly during the next one hundred years than during the last? What has been the relation between population and food production in the United States during the last century? Why do not the great city markets and better transportation facilities result in increased agricultural production?
3. What great change in American conditions is indicated by the manner of settling Oklahoma?
4. Describe the course of land values since 1850. Is a high level of prices in all commodities a benefit to farmers?
5. In what states has tenancy increased most rapidly? How can you explain this? How does high-priced land affect the tenant? Can you devise a tenant system such as would induce Americans to settle on rented farms for life without the expectation of sometime owning the land?

6. What are the causes of the growth of a distinct class of white farm laborers? Compare this class of laborers with the indentured servant of colonial days. Since there are no cheap new lands and since the cities are so tempting, will the abandoned farm ultimately be as common everywhere as in New England? Can boys be induced to stay on the farm while there is such a difference between the hours of labor on the farm and in the industries? What dangers are there in a "homeless" population?

7. What relation is there between tenancy and soil conservation? In what ways does the character of the tenant of the South add to the evils of the whole system? What effect does the system have upon the negro? What effect does the crop-lien system have (1) upon the agricultural system, and (2) upon the negro?

8. What present-day migrations are due to the high price of land? Why does the European immigrant succeed on farms where native Americans fail? Is this true in other industries besides agriculture?

9. Will smaller farms solve for the present the problem of land for everybody?

10. Describe the means being taken to extend the area of tillable lands.

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the average Middle Western farmer running a general farm cannot make wages if the land value is above one hundred and fifty dollars an acre.

2. Resolved that fictitious, or speculative, land values should be taken by the government in taxes.

3. Resolved that the negro of the South has not bettered his economic position since the days of slavery.

4. Resolved that American economic success has in the past been due to free and abundant natural resources rather than to American genius.

CHAPTER XXIX

LABOR CONDITIONS AND ORGANIZATION SINCE THE CIVIL WAR

Introduction

Increasing need of labor organization

- The employer's advantage over the individual laborer

- The influence of machinery

- The influence of the division of labor

- The abundance of labor

- Collective bargaining

Trade unions (1852-1880)

- The International Typographical Union

- Other national unions

- Local unions

- The Knights of St. Crispin

The need of broader labor organization

- The lack of common interests

- The leveling influence of machinery

The Knights of Labor

- Origin

- Program

- Causes of the decline of the Knights of Labor

The American Federation of Labor

- Origin

- Organization

- Methods of control

Industrial unions

The monopoly of the labor supply

- Restrictions on the number of workers

- Limitation of output

- The closed shop

Union methods

- Strikes

- The boycott

- Boycotts and the courts

- The union label

- Cost of strikes and boycotts

Peaceful settlement of labor disputes

Mediation and arbitration

Boards of conciliation

The trade agreement

The I. W. W.

Origin

Principles

Methods

The future of revolutionary unionism

The world-wide unrest

Introduction. — In a former chapter (p. 214) we noticed how, during the first half of the nineteenth century, the factory system, the growth of cities, markets, and transportation facilities, the increase of immigration, and the development of the laissez-faire doctrine were gradually bringing workingmen together so as to meet the changed conditions with a united front. The industrial development that swept the country after the Civil War hastened the labor movements that had thus begun. We have seen how the resources and the men of the nation were being drawn more and more under vast organizations. Machinery increasingly displaced the crafts, or divided their processes into many parts. The time had arrived by the end of the century when the individual had to rise or fall with the organization. The difficulties of succeeding in an old-fashioned, independent business became greater and greater. Within sixty years the nation passed from a helter-skelter, free-for-all race, into an orderly procession where men had to keep step with one another. When the twentieth century arrived, we had, in large measure, outgrown the age of individualism and had entered the age of organization — of coöperation, either voluntary or compulsory. The fact that a large group of men have, through this complexity of organization, become dependent for their living upon a much smaller group, is what has given the world its present labor problem.

The increasing need of labor organization. — The workingmen organized in order to safeguard their own interests. As the years passed, the need of a more perfect union, not only

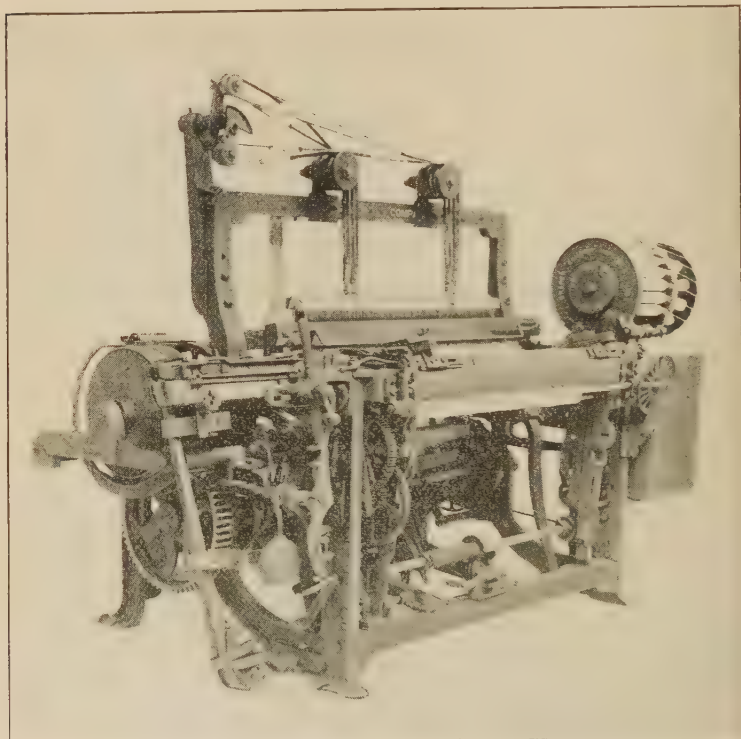
among craftsmen, but among all laborers, became apparent. In bargaining power the employer always had an advantage over the individual workingman.

Employer's advantage over the individual laborer. — Work is a life and death matter to the workingman. Oftentimes he must take whatever is offered. The necessities of the employer are seldom so urgent; it is never a question of life or death. Moreover, this initial advantage of the employer grows with the size of an establishment. If an employer hires ten men, the loss of one means the loss of one-tenth of his labor force and may be a serious inconvenience. But when he hires from one hundred to ten thousand men, the loss of one would hardly be noticed. As the great industrial organization developed, the value of the individual worker to the enterprise grew less. Yet to the worker his work was no less a matter of life or death.

Influence of machinery. — We have before noted how human skill was being more and more displaced by machinery or improved processes. In the United States the development of labor-saving machinery has gone farther than in any other country in the world. Such improvements either displace certain kinds of labor entirely, or they permit the substitution of unskilled workmen in the place of skilled. It can readily be seen that the skilled worker would have greater bargaining powers than the unskilled, because skill is scarcer, and he who possesses it has something to bargain with. If skilled workmen are displaced by machinery and unskilled workmen, the bargaining advantage of the employer is thus largely increased.

Influence of division of labor. — One of the results of a perfected organization has been a minute division of labor. This process has likewise eliminated skill. Often, indeed, the division has been for the most part accomplished by machinery. In the making of shoes, for example, the processes are performed almost entirely by machines, each attended by a worker. Some of these operations require skill, yet even the most exacting of them can hardly demand the years of apprenticeship once required of the man who made an entire shoe. In some indus-

tries the division of labor is secured merely by the organization of the labor force without much aid from machinery. The meat dressing and packing business is an example. Here the



Courtesy of the Draper Corporation

THE NORTHROP AUTOMATIC LOOM

The inventors have put so many brains into this machine that it will perform a large number of operations which people once would not have believed could be done except by the most skillful of human workers.

work of slaughtering and dressing the animals has been divided into a number of distinct but simple operations, each one performed by a man who does nothing else.

Abundance of labor. — During the past fifty years unskilled labor has been growing more abundant through the steady and

enormous increase of immigration. Moreover, since about 1880 the crowd around the labor market has become more dense because the outlet of abundant lands has been closing. At the same time the character of the immigrants began to change. Instead of coming from northern Europe and the British Isles, they came in growing numbers from Italy, from the oppressed nationalities of Austria-Hungary, the Balkan States, Russia, and Turkey. Most of these people were unskilled workers looking for a "job." They fitted well into an industrial system which, since the Civil War, was finding comparatively less need of the skilled worker. Their numbers, their diversity of language, and their lack of skill weakened their bargaining powers, but strengthened that of their employers.

Collective bargaining. — This inequality between labor and capital resulted in unionism. In union there is a strength to which individual action cannot attain. The employer might say to a single worker, "You may work on my terms or not at all." He cannot, however, say this to all his workmen at the same time. The method of dealing with the employer in a group instead of individually has come to be known as collective bargaining.

Trade unions, 1852–1880. — Between 1852 and 1880 many national trade unions arose and became established. This development followed the railroads, which were connecting and bringing into closer contact and competition industries situated in different parts of the country. The causes leading in 1852 to the formation of the National Typographical Union — the first of its kind — plainly illustrate how broadening competition necessitated a broader kind of union.

The International Typographical Union. — Throughout the first fifty years of the nineteenth century, established printers had been fighting against certain outside competitors, who from about 1815 had been known as "rats," that is, men who worked for less than the established rates. Another cause of trouble was the "two-thirders," or boys who were placed on skilled work without having passed through the customary

years of apprenticeship. The hiring of "two-thirders" resulted from the breakdown of the legal requirements for apprentices (p. 216). Out of the increase in the numbers of "two-thirders" came a large increase in the number of "rats." Then came the railroads. "Rats" could easily pass from city to city, and so became a national, instead of a merely local, menace to the regulars of the trade. Hence arose the National Typographical Union — a generally successful attempt to bring all local typographical organizations under one agreement. The national danger from "rats" was met by a national organization of the regulars. Uniform rates of pay were established, agreements were made not to work with nonunionists, and rules for apprentices were formulated. In 1869 the National Typographical Union became the International Typographical Union to take in the Canadian trade.

The above account not only shows how the natural economic development of the country was followed by the necessary labor organization, but also how certain other troublesome labor questions originate. The limitation of apprentices, for instance, has here passed from the law and from custom into the hands of the union and the employer. What the law failed longer to do, these two private groups concerned were henceforth to do. The case of the outsider is similar. Once he was the "illegal" worker (p. 217), the man who had not fulfilled the legal requirements for entering upon his trade. From this time on he was to become the "scab," the man who had not submitted to the regulations of the union.

Other national unions. — Before the Civil War three or four other trades had followed the example of the printers. During the 'sixties and 'seventies, however, there was a rapid expansion of the national trade union. In addition to the growth of railroads, other causes gave impetus to labor organization. In the first place, the organization of industry on a larger scale, which we noticed early in this chapter, began. Railroads consolidated into great systems. Industries like the manufacture of woolen goods and iron began to pass into the control

of fewer hands, owing in part to the needs or opportunities brought about by the war (p. 291). Powerful manufacturers' associations came into being. Prices were rising during much of the decade of the 'fifties and until the close of the war. As men were drawn off to the war, machinery was more and more substituted for them; and when the men returned, they created a large labor surplus which had to be taken care of.

Among the more notable unions formed were the railroad brotherhoods, organizations of miners, cigar makers, iron and steel workers, journeyman tailors, carpenters, and masons. Many of the early national organizations did not survive the panic of 1873, but others afterward arose to take their places. Some, however, have continued to the present day strong and influential.

Local unions. — There were also formed many local unions unconnected with national organizations. Particularly true is this of the Civil War period, when prices were very high. Then the conditions were, in a measure, similar to those between 1825 and 1837, when we saw the beginnings of the local union. From 1860 to 1863 inclusive, it has been estimated that three hundred locals were established in New York City alone. A great many of these fell to pieces a little later.

The Knights of St. Crispin. — The Knights of St. Crispin were a great organization of shoemakers. On account of the introduction of machinery in the 'sixties, shoemaking had changed almost in the twinkling of an eye from a hand to a machine and factory industry. The introduction of green hands to run the machines brought thousands of the skilled workers together late in the decade. At one time there were over forty thousand in the order, far more than had ever belonged to a labor organization in this country before. It controlled nearly all the skilled shoemakers of the large cities of the East. The prime object was to fight or control the machine in the belief "that the benefits of machinery should be to those who toil with it as well as to those who own it or buy its product."¹ Never-

¹ Carlton, F. T., *History and Problems of Organized Labor*, p. 66.

theless, the fight was easily won by the machine; the Knights of St. Crispin soon went to pieces, and the old shoemaking craft disappeared.

The need of broader labor organization: *The lack of common interests.* — By 1870 it was becoming evident that labor organizations must include more than merely the skilled workers, if they were to hope for success. The experience of the Knights of St. Crispin was but one of many which proved that labor — skilled, semiskilled, and unskilled — must try to find some common ground upon which it could stand united. We have seen (p. 218) that attempts to bring all workers together had been made at earlier periods. A general industrial congress also met several times during the 'forties, and a national labor union lasted for a few years between 1860 and 1870. It proved very difficult, however, to find common interests among different trades, as well as between the less skilled and the more skilled. This is to be explained by the fact that these several groups were essentially noncompetitive. Carpenters and weavers, for example, do not compete; the skilled workman does not seek the "job" of the unskilled. Why bring all these groups under a single organization?

The leveling influence of machinery. — While machinery and the factory were thus overturning labor traditions and customs, they were, on the other hand, creating conditions which would tend to lessen the gap between the different groups of workers. The machine, accompanied by division of labor, brought workingmen nearer to the same level. The hand-working craftsmen were more and more replaced by machine tenders. These can pass from one industry to another with comparative ease and so are competitors. It does not take an unskilled worker long to learn how to tend a single machine, and so he, too, becomes a competitor of all the others. This leveling process had been going on since the middle of the nineteenth century. When it had proceeded far enough to bring a great many laborers into competition, even though they did not nominally belong to the same trade, then the need of *labor*

unions as distinct from purely *trade* unions began to be felt. The first result of this need was the formation of the Knights of Labor.

The Knights of Labor: *Origin.* — In 1869 an organization of tailors was started in Philadelphia. Soon afterward its members



Reprinted by permission of The Philadelphia Commercial Museum

FOOT-KNITTING STOCKING MACHINES

Notice how few people there are in this room. It does not take a man more than a few weeks to learn how to run a large number of these machines.

decided to admit anyone who labored with hand or brain, except bankers, stockbrokers, lawyers, gamblers, and dealers in intoxicants. The principle agreed upon was that the interests of all workers were so closely interwoven that an injury or benefit to one would, in the long run, be an injury or a benefit to all.

At first the association was secret — the symbol being five stars — but owing to popular prejudice against secret orders and to the opposition of religious bodies, this feature was soon abandoned.

The organization at first consisted only of local and district assemblies. These might consist of a trade or of a mixture of trades and callings. In 1878, however, all of them were brought together under a sovereign national assembly of delegates from each of the smaller bodies. No strike could be called without the consent of the National Assembly, which had practically supreme authority over all.

Program of the Knights of Labor.— The purposes of the Knights were progressive and idealistic. They opposed the strike and the boycott. They proposed the abolition of the wage system in favor of coöperation, the establishment of bureaus of labor statistics, the weekly payment of wages, mechanics' lien laws, arbitration of labor disputes, limitation of child labor, health and safety laws, prohibition of alien contract labor, the establishment of postal savings departments, the government ownership of telegraphs, telephones, and railroads, the initiative and referendum, the limitation to the actual occupant of land titles, and compulsory education.

For several years after 1880 the order grew rapidly. By 1886 the membership is variously estimated at from six to seven hundred thousand. Then a rapid decline set in, and its influence passed away, although the organization has continued to the present day.

Causes of the decline of the Knights of Labor. — The immediate occasions of the decline were quarrels over politics and the failure of some railroad strikes which it backed in spite of its avowed opposition to such methods. In fact, however, the organization was based upon assumptions which were yet only partially true. These assumptions were (1) the identity of interests of employer and employees, and (2) the identity of interests of workers at different trades and of different degrees of skill.

As a matter of fact, employers and employees have never recognized in practice the identity of their interests. In all

their dealings with each other they assume the attitude of competitors for the products of industry. This will continue until all the grounds of suspicion that one is getting the better of the other are removed. Up to the present time they are a long way from any such basis of mutual good will. As to the workers, they could not yet all work together in harmony. Even if the leveling process discussed above should be made as complete as possible, there would still be need of much patience and tact in order to harmonize the different groups. As it was, the interests of the skilled and the unskilled still clashed. The skilled sought to limit their numbers, thereby raising their own wages. This same limitation, however, increased the numbers of the unskilled and poorly paid. Furthermore, it is evident that the raising of the wages of any given group may mean an increase in the cost of living for the others.

The American Federation of Labor: *Origin.* — If the different classes of labor were to be brought under one organization, therefore, it became evident that each class must be allowed a degree of liberty of action. It was from this necessity that the idea of federating the various trade unions arose. Under this form of union the central government would have slight autocratic power, its authority being confined to matters which affected labor as a whole and to smoothing over differences that might arise between two or more members. With a view to working out such a plan of union, a meeting of delegates of labor representing two hundred and fifty thousand workmen was held in Terre Haute, Indiana, in 1881. At this meeting the Federation of Organized Trades and Labor Unions of the United States and Canada was formed. Five years later a new constitution was adopted, and the name was changed to the American Federation of Labor.

Organization. — As its name implies, this organization is a federation and allows much freedom of action to the local bodies of which it is composed. For a long time it held strictly to the idea of organization by trades. In these respects it differed from the Knights of Labor. As a federation, it resembles the United

States of America. Delegates from the different unions meet annually in a convention which corresponds to the United States Congress. A president, eight vice-presidents, a secretary, and a treasurer form the executive department. The judicial functions are shared by the executives and the Convention. Corresponding to the states of the Union are (1) state federations of labor, (2) city central unions, (3) national trade unions, and (4) local trade unions not connected with any of these three. Each is represented by delegates in the National Convention.

The Convention elects the officers every year, deals with matters of finance, and settles disputes between different trades. It grants charters of admission to new applicants, and takes up such questions as the support of strikes, the union label, and the disciplining of any member for breaking the rules of the Federation. The executives, however, carry on all the work during the year while the convention is not in session. They also organize new unions, aid those on strike, educate the public through their official organ — *The American Federationist* — and keep watch over legislation.

Methods of control. — By its policy of noninterference with the liberty of action of its members, the Federation has generally kept peace within its ranks and has grown rapidly. Because of its strict adherence for many years to the principle of organization by trades, however, it failed to reach a great many laborers who had no trade. It has, therefore, been charged with being an aristocracy of labor. In consequence it has been compelled to modify its rules somewhat so as to take in unions embracing the workers of an entire industry, such, for example, as the United Mine Workers of America. Within these unions can be found men of many different trades.

GROWTH OF THE AMERICAN FEDERATION OF LABOR SINCE 1897

YEAR	NUMBER MEMBERS	YEAR	NUMBER MEMBERS
1897	264,825	1912	1,770,145
1901	787,537	1914	2,020,671
1902	1,024,399	1915	1,946,347
1907	1,538,970	1920	4,078,740

Industrial unions. — In spite of the failure of the Knights of Labor, since the last decade of the nineteenth century there has been a growing tendency to form unions embracing many trades. In the first place, machinery has gone far toward bringing the skilled and the unskilled to the same level. Where this has not been accomplished by machinery, it has often been done by a high degree of organization. Secondly, most large industries require the help of a great many different kinds of workers. Around a mine, for example, there may be found engineers, firemen, machinists, teamsters, blacksmiths, carpenters, gate-men, inspectors, loaders, slate pickers, breaker boys, timbermen, and many others.

Now a strike by a part of the laborers in such an industry may be rendered ineffective by a failure to strike on the part of the others. From these conditions there have sprung several unions containing all the men in a given industry, regardless of trades. Since 1897 the United Mine Workers of America have included all the men who work around the mines. Garment makers and longshoremen have similar organizations. These are known as industrial unions. The American Federation has recognized the tendency of the times, and has included a number of industrial unions in its membership.

Monopoly of the labor supply. — The object for which unions exist is to secure more for what labor does. To attain that object the modern labor organization has adopted the methods of the employer and the capitalist, who have sought to eliminate competition by organization, by agreement, and by the concentration of competing units under a single management. The national trade unions and the American Federation of Labor have followed the same policy. Just as capitalists have sought monopoly of raw material, factories, machinery, and distributing agencies, so likewise the unions have striven to secure a monopoly of the labor supply. The possessor of such an advantage can force his terms upon a whole reluctant world if he sees fit to do so. In order to obtain and hold such a monopoly, the workers have adopted various devices.

Restrictions on the number of workers. — Because it is easier to establish a monopoly of anything that is scarce and in great demand, the unions attempt to restrict the number of available workers. Skilled workers once undertook to accomplish this by limiting the number of apprentices. Since about 1890, however, less and less prominence has been given this practice. Some unions still have apprenticeship rules, but a large number have none at all, and often rules that do exist are not strictly enforced.

The pressure of labor organizations also forced the passage of laws restricting immigration. Chinese immigration has been prohibited since 1882, and agreements having a similar end in view have been made with the Japanese government. In 1888 it was forbidden to bring in immigrants under contract to labor. This law, however, has been practically a dead letter, and immigration from the European countries has gone on with little check. Another law, passed in 1917 over the President's veto, prohibits the entrance of foreign illiterates. In May, 1921, the "three per cent" immigration law went into effect, to last until June, 1922. During this period the law restricted the immigration of any nationality to three per cent of its total in the United States in 1910. The act reflected a very general apprehension lest the country be flooded with the war-worn people of Europe. Its purpose, therefore, was not entirely to restrict the labor supply, although this was one of its objects. In fact the acts of 1917 and 1921 were more than legislation in favor of some particular faction, group, or party. They were but another indication of the revolution in American ideals that has taken place since the closing of the frontier. For forty years Americans gradually and reluctantly have been coming to the belief that no longer is it safe for America to stand with open arms and say to all comers, "Welcome." We have now ceased to measure greatness by mere numbers, and have begun to examine into the qualifications of those who would seek our hospitality. There has dawned upon many a tardy recognition of the necessity of conserving our human

resources with a view to the founding of a better and abler type of man.

Limitation of output. — One of the expedients the unions have adopted is to restrict the output per man, so as to make the work go farther. Consequently, the rules of many unions impose fines upon members who do more than a prescribed amount of work per day. It must be said, however, that these regulations have other purposes in view as well. They often have been made to meet the "speeding up" practices of the employer. The latter found that by causing his machines to run faster, or by putting more of them in charge of one man, he could compel his employees to work faster. It was to offset these tactics, as well as to "make the work go round," that the unions have placed limitations upon the amount of work to be performed by their members.

The closed shop. — Since about 1890 the unions have sought vigorously to establish the closed shop. This means that all men in a shop, a factory, or on a given job should be union men. The idea of the closed shop is a very old one. In the Middle Ages craft guilds chartered by law shut out from the trades everybody who had not passed through the course prescribed by the guilds and been admitted to them. The guilds, however, monopolized not only the labor supply, but also the buying and selling functions. When the craft guilds broke down in the sixteenth and seventeenth centuries, laws took the place of the guild rules in limiting a craft to certain men. Then, as the laissez-faire doctrine came in during the eighteenth century and nullified the laws, the craft unions of the early nineteenth century adopted the same principles that once had been sustained by guild rules or by the law. Later in the century came the factories, machinery, and division of labor, destroying many a craft and adding to the numbers of the unskilled or semi-skilled. With these brought together under the factory roofs, it was no longer so much a question of labor's maintaining a monopoly of the crafts as of its securing a monopoly of the shops. Hence arose the doctrine of the closed shop.

Having once established the principle in a shop or a factory, the hope is then gradually to extend the system to others until a whole trade or industry is closed shop. The workers would thus have an absolute monopoly of the labor supply in such a trade or industry. They would be in a position to impose the union regulations as to hours, wages, and all other conditions.

We consequently find that within recent years recognition of the union — the first step toward the closed shop — appears more and more often as one of the objects of strikes. This was true of six per cent of the strikes in 1881, but of thirty-one per cent in 1905. Some of the greatest of modern strikes have taken place over the question of the closed shop. In 1892 the strike in the Homestead, Pennsylvania, steel mills sought to establish this principle. The result was the defeat of the laborers, the destruction of the union, and subsequently the open shop in most steel industries. On this same question hinged the settlement of the great garment-trades strikes in New York City in 1910. Here there was a compromise, although it was a practical victory for the strikers, as union rules were established in the shops. Nonunionists, however, were not wholly excluded from them.

Union methods: *Strikes.* — The importance of organization, when it comes to the question of a strike, labor's ultimate reliance for gaining its ends, is evident. If the organization is complete and the closed shop has been established, the strikers will not be handicapped by having some men remaining at work. In the second place, thorough organization will have provided for funds and efficient management for the strike. Most important of all, the labor leaders, having made a study of conditions, will try to choose the strategic time for striking, the time when success is most certain. As a matter of fact, if there is perfect organization, if a practical monopoly of the labor supply in an industry has been secured, there is great probability that no strike need take place at all. The mere threat of a strike may win the desired concessions. In certain industries the strategic position of the workers, if organized, is such as to make

strikes unnecessary. In almost any city the power of a plumbers' union is recognized by any citizen who has pipes that break. In the summer of 1916 the railroad brotherhoods by a threat to strike forced the Congress of the United States to give them the eight-hour day. Perfect organization in all fields would, therefore, probably diminish the number of strikes and certainly would increase the power of labor.

Taken as a whole, the period since 1870 has been marked by an enormous number of strikes. Before 1870 strikes had always been local in nature. Since then, however, in addition to a great many local disturbances, there have been many of nation-wide importance. We can here mention only a few of the more noteworthy. The late 'seventies were marked by disastrous strikes on the Baltimore and Ohio and the Pennsylvania railroads, and the middle 'eighties by numerous strikes on other great trunk lines. In 1892 occurred one of the most tragic of all labor wars, the strike in the steel mills of the Carnegie Works at Homestead, Pennsylvania. Two years later the railroad strike and boycott, growing out of trouble in the Pullman works at Chicago, threatened to tie up the whole transportation system of the country. Disaster also came near following the strike of the anthracite coal miners at the beginning of the new century. Many other disputes of less widespread interest have been fought out with equal bitterness. At times the mining regions of Colorado and other Rocky Mountain states have been the scene of extreme violence and illegal acts perpetrated by both sides.

The boycott. — Strikes have often been rendered more effective by the boycott. The term "boycott" is used in labor troubles to denote an attempt on the part of the employees to secure a cessation of business relations between the public and their employers. The word originated in Ireland from the name of an exceptionally unpopular landlord's agent, Captain Boycott, against whom a social and business ostracism had been established by his neighbors. It is a common method of coercion and is not confined to labor unions. A blacklist is one instance;

a league of housewives, sworn not to purchase high-priced eggs, is another.

Soon after 1880 boycotting as a means of attack was taken up eagerly by the labor unions. It was found that strikes were often ineffective because men's places could too easily be filled by strike breakers. It became necessary, therefore, to attack the employer by preventing the sale of his goods, or the filling of his labor supply. The latter object was to be accomplished by means of the "picket" — a guard stationed around the plant to dissuade or frighten men from going to work. To destroy the trade of the employer, pickets were also used, or placards were posted, urging people not to patronize him. The firm's name was put on the "unfair" list of employers' names in labor papers. *The American Federationist*, from the beginning of its publication in 1894, with few interruptions until 1908, carried the names of such firms on its "We don't Patronize" list. Middlemen were urged not to deal in the goods of the boycotted firm, and, if persuasion did not work, threats were resorted to. Such methods have proved effective, and in some cases businesses have been brought to the verge of ruin.

Boycotts and the courts. — Boycotts have not, however, always won popular approval, because the public has often been put to great inconvenience by them and many innocent firms have been made to suffer. The courts have also been hostile. Between 1885 and 1895 hundreds of men were fined or imprisoned on charges growing out of boycotts. Injunctions and the imprisonment of the leaders caused the failure of the Pullman boycott. In the case of the boycott of a certain line of hats, since famous as the Danbury Hatters' case, a jury awarded the injured company, under the Sherman Antitrust Act, damages of two hundred and forty thousand dollars against the local hatters' union. Prison sentences were given certain officials in the American Federation of Labor for an alleged violation of an injunction against the publication of the name of a boycotted firm in the *Federationist*. The sentences were not carried out,

but since that time (1908) the "We don't Patronize" list has not appeared.

The union label. — The union label is a mild form of boycott. The labels are placed on articles made in union shops, and are thus an appeal to buyers to purchase these articles instead of others. The practice started among the cigar makers of California in an attempt to prevent the sale of cigars made by Chinese laborers. The idea was soon adopted by other trades, such as garment makers, tailors, and bakers. In 1909 the American Federation established a union-label department, and in 1912 nearly seven hundred million labels were used in only eight different trades unions.

Cost of strikes and boycotts. — Strikes and boycotts have proved very costly because of the destruction of life and property and loss of wages and profits. Many people not directly concerned have also suffered. It has been estimated that the Pullman strike cost the country over eighty million dollars. In the great strike on the Pennsylvania railroad in 1877, sixteen hundred cars and one hundred and twenty-six engines were destroyed, besides almost all the shops and buildings in Pittsburgh belonging to the company. In the Homestead strike in 1892, the men were entrenched for days behind walls of steel billets. For many hours they fought a pitched battle with rifles and cannon against Pinkerton detectives armed with Winchesters. As many men were engaged as in some of the more important battles of the Revolution, and the number of killed and wounded was considerable. The cost of such methods is evident, but it can never be accurately estimated.

Peaceful settlement of labor disputes: *Mediation and arbitration.* — The cost of industrial war has induced many leaders on both sides to seek for a better means of settlement. To this end the long-suffering public has also brought pressure to bear. The most common methods of peaceful adjustment have been mediation, arbitration, and the trade agreement. In mediation a third party comes in between the belligerents and persuades them to get together again and talk matters over, or to

submit the question at issue to the decision of an impartial set of men. When the latter method is adopted it is called arbitration. A notable example of mediation occurred during the great strike of one hundred and fifty thousand anthracite coal miners in 1902. After the struggle had gone on for months, President Roosevelt succeeded in bringing the two parties together, and their differences were finally threshed out before a commission and settled.

Boards of conciliation. — Between 1880 and 1914 over thirty states established machinery for preventing labor wars. The most successful kinds have been state boards, whose duty is to investigate the trouble and attempt to bring about a peaceful settlement either by action of the parties themselves or through arbitration. One of the most successful of these bodies, the Massachusetts Board of Arbitration and Conciliation, secured between 1897 and 1915 settlements in four hundred and sixty out of two thousand six hundred and twenty-eight cases. Such boards do not have compulsory power. They can only use persuasion or the influence of the public, which they inform of the facts of the case. Oftentimes, however, one or both of the disputants will ask for the services of the board. Compulsory arbitration, on the other hand, has been vigorously opposed by capital and labor alike. Both sides prefer to be at liberty either to fight the matter out or to bargain with each other.

The trade agreement. — The trade agreement is a formal statement, generally in writing, of the conditions which shall govern for a certain length of time the relations between employer and employee. Since the closing years of the nineteenth century this form of bargaining has come increasingly into favor.

Such agreements are made at conferences between representatives of the two sides. These meetings have been compared to the conferences of the representatives of nations at war, empowered to negotiate a peace. One of the most notable trade agreements is that made annually ever since 1898 by the owners of the bituminous coal mines and the United Mine Workers of America. Since the anthracite coal strike of 1902 the opera-

tors and mine workers in this field have also worked under the trade agreement. Under this method of adjustment the railroads and the brotherhoods have long governed their relationship. By 1911 local unions in Massachusetts representing over one hundred thousand workers had signed agreements with their employers. In many other places as well, attempts are being made to avoid the losses of industrial war in this way. John Mitchell maintained that it is the only hope of peace in the industrial world.

The I. W. W. — The twentieth century has also seen the growth of a kind of union that is far more radical than any that had hitherto been produced. The new movement is revolutionary in character, demanding nothing less than the destruction of the present capitalist class and the seizure of capital by the laborers. It proposes to level all distinctions among men, bringing everyone into a single class, namely, that of laborers. Because the ordinary labor organization has not always been successful in reaching the great mass of common laborers, on such its appeal has the greatest effect.

Origin. — The inspiration of the movement came from the Western Federation of Miners, a radical and aggressive union of the Rocky Mountains, organized in 1893. In 1896 this organization withdrew from the American Federation of Labor, and began to work on an all-embracing industrial union. First there was established the Western Labor Union, which in 1902 became the American Labor Union with headquarters at Chicago. In 1905 a conference of thirty-four labor leaders from the Western Federation of Miners, the American Labor Union, and other radical groups resulted in a convention in that same year. This convention organized the Industrial Workers of the World. Since then the most revolutionary elements have taken control, while the less radical, including the Western Federation of Miners, have withdrawn.

Principles of the I. W. W. — The I. W. W. definitely accept the existence of two classes of people, the capitalist and the laborer. Between these classes, they hold, there can be no

common interests. What is life to one is death to the other and cannot be otherwise. Wherefore, there can be but one logical attitude for either side to assume — that of bitter and unending warfare between the two. Not until labor has absorbed all capital will the warfare end.

In the preamble adopted in the convention of 1908, we find these words: "Between these two classes a struggle must go on until the workers of the world organize as a class, take possession of the earth and the machinery of production, and abolish the wage system . . . Instead of the conservative motto, 'A fair day's wages for a fair day's work,' we must inscribe on our banner the revolutionary watchword, 'Abolition of the wage system.' It is the historic mission of the working class to do away with capitalism. The army of production must be organized, not only for the everyday struggle with capitalists, but also to carry on production when capitalism shall have been overthrown." ¹

I. W. W. methods. — The I. W. W. adopted the strike as the chief weapon for accomplishing their purposes. It was not to be primarily a strike for a little wage increase, for shorter hours, or for other changes in conditions, and then a treaty of peace. For the I. W. W. there was to be no peace. Even when a strike had been won, no agreement binding the workers was to be signed. They must be left free to strike again next week or next month. In this organization the purposes of the strike are (1) to train the members so that when the final great test shall come there will be no faltering in the ranks, and (2) to keep the capitalist in a continual state of apprehension by the infliction upon him of constant petty losses. Even when the workers should return to work, the struggle was to go on in secret. Loafing on the job, mysteriously broken machinery, and spoiled goods were to be the evidences of a continuance of warfare in times of nominal peace.

Finally, after years of such training, and after the gradual assumption by labor of the interest and profits of the employer,

¹ Tridon, André, *The New Unionism*, p. 99.

the day would come when an industry was to be taken over by the workers. Then the universal strike should be called. No violence was to accompany the strike, but the workers were simply to cease work. It should be the strike of folded arms until the demands of labor were won. In this way one by one all industries would finally pass into the hands of the workers.

Such is the program of direct action. The I. W. W. scorn legislation, arbitration, and trade agreements as methods of gaining the ends of labor. These, they claim, are the weapons of the capitalist. The whole political government, they believe, is in the power of the capitalists, who use its agencies — the laws, the courts, the militia — as a means of suppressing the workers. Arbitrations and agreements, likewise, they hold to be dominated by the capitalists. It is, therefore, only as the workers strike directly, and take what they want by the methods outlined above, that they can ever obtain their own. Against trade unions their antagonism is quite as great as it is against capital. The American Federation of Labor they designate as the American "Separation" of Labor, and the craft unions as the "crafty" unions.

The future of revolutionary unionism. — What will be the outcome of the I. W. W. movement? It has already had some marked effects. It has driven the old-line unions to greater efforts toward extending their protection to the unskilled workers; for in spite of the great growth of labor organization, it must be remembered that only a small proportion of the mass of laborers — probably between ten and twenty per cent — belong to the unions. It has also made the states and the nation consider with growing anxiety the questions of uncertainty of employment, inadequate wages, land tenancy, and other unwholesome conditions out of which comes a shifting, discontented population.

The I. W. W. a symptom of world-wide unrest. — Moreover, it should be noted that ideas similar to those of the I. W. W. have taken root in many other countries. They had entered France and England even before they invaded the United

States. A few months after the Russian Revolution began, it became dominated by the Bolsheviki, whose ideals are similar to those of the American I. W. W. It is an unrest that is more than local; it is international and world-wide.

The weakness of the I. W. W. in the United States is that they do not at present appeal to enough people. Their numbers, never large, fluctuate rapidly and widely. The great majority of people in the United States do not care for anarchy, nor do they wish to see the government overthrown and an industrial society run by the workers substituted for it. Americans think they love democracy, and the present-day radicals hate American democracy quite as openly and unreservedly as they hated Russian Czarism. Their success in America, therefore, must depend on their persuading enough people to think that they hate democracy.

It becomes only too evident that the I. W. W. appeal is mainly to those who are the most discontented. It falls on fertile ground where the hopes and aspirations of large numbers of men meet with repression. The soil of the United States is not yet especially favorable, but there should be no undue optimism. It seems inevitable that all men must have a greater share in the determination of their own lives. It is not only wages, but also a larger participation in management that men are demanding. This demand grows more insistent in all walks of life — whether on the farm, in factories and mills, in the mines, or in mercantile pursuits. We have about reached the end of the time when it can be tacitly accepted that the business of some is to command, of others to obey, in the industrial world. Men have concluded that political democracy and industrial autocracy are not suitable bedfellows. Industrial unrest and radicalism will certainly be with us until a greater degree of industrial equality is established.

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QUESTIONS

1. What changes had taken place in the industrial situation between 1800 and 1865? How did these changes affect the bargaining power of the individual laborer? How does collective bargaining offset the advantage held by the employer?

2. Give an account of the Typographical Union to show what new problems labor was facing by 1860. How were these problems accentuated during and after the war? Give an account of labor organization up to 1873.

3. What effect did machinery have upon class distinctions among laborers and upon labor organization? Do you think there really are differences of class in the United States such as are found in European countries?

4. Give an account of the Knights of Labor. Why was this organization unsuccessful? What opinion do you have as to whether or not the interests of employer and employee are identical? Give reasons to support your opinion.

5. Give an account of the origin and growth of the American Federation of Labor. Compare its government with that of the Knights of Labor. How has it succeeded in holding together workers differing so greatly in skill and occupation? Do you think that the Federation has higher ideals than those of the average employer, or is it a hard-headed and practical organization? Give reasons for your answer.

6. What are industrial unions? What conditions have brought about their growth?

7. Discuss the various methods by which the unions have sought to secure absolute control of the labor supply. What difficulties can you see in the way of securing such a monopoly? Is a monopoly of the labor supply more desirable than a monopoly of the natural resources? Has a union the moral right to prevent any man from working, if he wishes to work? Will limitation of output and of workers make more work and more wages for all laborers, or less work and lower wages? Give reasons for your answer.

8. Is a strike "successful" that secures such high wages for the strikers that people cannot afford to buy the product? Should labor organizations be exempted from responsibility in case of damages done by the illegal acts of individual members in course of a strike?

9. Can you justify the boycotting of a concern for buying the products of a plant in which a strike is taking place? Should labor unions be permitted to "picket" a place where a strike is in progress?

10. Describe the substitutes for strikes that have been tried in the settlement of labor disputes. Can you see any ways in which the public might be made to suffer through trade agreements? Give arguments for

and against compulsory arbitration in the case of essential industries such as transportation and coal mining. See if you can find any cases where labor has lost more than it gained in an arbitration of a dispute.

11. What were the origins of the I. W. W.? What are their principles? What do you think is the cause of there being any I. W. W. in America?

12. Do you think the dissatisfaction of laborers is largely because of their desire to "Keep up with the Joneses," and not wholly because of labor conditions? Give reasons for your answer. In case your answer to the preceding question is in the affirmative, whom do you consider to be the more responsible for this state of mind, the "Joneses" or the laborers? Give reasons for your answer.

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the closed shop in all industries would be to the best interests of all the people.

2. Resolved that the antitrust laws should apply to labor organizations as well as to organizations of capital.

3. Resolved that where capital and labor cannot agree they should be compelled to arbitrate their differences in such industries as coal mining, iron mining and manufacturing, meat packing, and transportation.

4. Resolved that labor should be given a share in the management of the industries.

CHAPTER XXX

SOCIAL AND INDUSTRIAL WELFARE

- Reaction against the laissez-faire doctrine
- Woman and child labor in the United States
- The restriction of child labor
 - Compulsory education after the Civil War
 - Present status of child labor
 - State census bureaus
- The labor of women
 - The movement from the home to the factory
 - New employments
 - The sweated trades
- The wages of women
 - Insufficiency
 - Minimum-wage laws under the police power
 - Legislation in the United States
 - Constitutional difficulties of enforcing the laws
- Safety, sanitation, and health measures
- The hours of labor
 - Children
 - Women
 - Men
- The hazards of industry
 - The dangers of modern industry
 - The doctrine of individual responsibility
 - The doctrine of public responsibility
 - Accident insurance in foreign countries
 - Accidents in the United States
- Compensation under the common law
 - The employer's defenses
 - The employer's defenses and the Industrial Revolution
 - Destruction of the employer's defenses
 - The responsibility of the industry
- Workmen's compensation laws in the United States
- Summary of the era of combination

The reaction against the laissez-faire doctrine. — For over a century industry in England and the United States — and to

a limited degree in some western European lands as well — was carried on under the laissez-faire principle. Everywhere the prevailing spirit was to let every man go as far as he could carry himself. The idea was that all began on an equal footing, and any failure was due to one's own fault and nothing else.

The revolution which we have seen taking place in industry, however, has brought with it a revision of the prevailing theories of the preceding century. The desire has grown stronger to compel a more even distribution of opportunity. Unchecked individual freedom had left growing numbers far behind in the race, to become drags upon the rest of mankind. As industries grew in size so that an individual was lost in the crowd, it became increasingly evident that many an unfavorable accident might spoil all his chances of success. There was, for example, the accident of birth and environment. A child destined at an early age to long hours of hard work in factories or mines, women compelled to labor beyond their strength at wages inadequate to support a healthy life, immigrants settling by the thousands in the slums of the cities, — these were groups whose chances from the start were not equal to those of the more fortunately born and reared.

There were also the hazards of industry. Machines inevitably increased the risks to life and limb, and all the more as they were geared to higher rates of speed. Moreover, many industries, such as railroading and mining, were by nature hazardous, while others were especially dangerous to health. Modern high-gear industry made it necessary for society to protect many people by artificial means, to interfere with their so-called freedom to choose their calling, and not to permit them to take their chances in an unequal struggle.

Woman and child labor in the United States. — These problems had been met in England by restrictive legislation during the first three-quarters of the nineteenth century. Effective legislation of this kind began much later in the United States. As the factory was slower in developing here, there was a smaller proportion of women and children who worked outside the home.

The constantly moving frontier kept bringing in new states which, for the time being, were almost wholly agricultural. Many also believed that not to keep women and children at work was an economic waste and a moral danger. Finally, on account of our form of government, there was no single power that could pass such laws for the whole country. Nearly all measures that have gone into effect have had to come piecemeal, state by state.

The restriction of child labor. — Before 1860 a little mild legislation as to child labor had been passed in New England and the Middle Atlantic states. In some states a few weeks' school attendance for working children was required, and certain limitations had been set on hours, and age of beginning work. Nowhere, however, were the laws adequate or even fairly well enforced. Furthermore, they were not popular and were little understood. A Connecticut school visitor, an official charged with executing the school law of that state, reported: "If I were to attempt to execute the present law, the village would be too hot to hold me."

Compulsory education after the Civil War. — Immediately after the Civil War the states began one by one to revise their laws so as to make them enforceable, and year by year to broaden their scope. In 1866 and 1867 Massachusetts forbade the employment of children under ten in manufacturing, established a system of factory inspection, and provided for three months' compulsory schooling each year for those between the ages of ten and fifteen. In 1869 towns were authorized to establish evening schools, and in 1883 were compelled to do so if they had a population of over ten thousand. In 1873 the length of the school year was extended to twenty weeks, and the age of attendance was raised to twelve. In 1888 children under thirteen were excluded altogether from factories, workshops, and mercantile establishments, and those under fourteen except during vacation. All other indoor work was forbidden children under thirteen unless they had attended school for twenty weeks. In 1889 the age of compulsory school

attendance was raised to fourteen, and the next year the school year was increased to thirty weeks.

By 1914 there were but six states, all in the South, which still had no compulsory education laws. In the 'seventies fourteen states and territories began such legislation, in the 'eighties nine, in the 'nineties six, and during the next decade ten. With one or two exceptions, all the states by that time had some legislation restricting child labor.

Present status of child labor. — Most states have settled upon fourteen as the minimum age for leaving school and for going to work. Many have also extended the school age to sixteen in the case of children not able to pass certain educational tests or not employed. Industries dangerous to the body or the morals have received special treatment. In states that have advanced codes, night work is forbidden to girls and boys under ages varying from fourteen to twenty-one. Eighteen to twenty-one is the usual age limit for working around dangerous machinery. The hours of labor have been reduced very greatly. Up to 1913 fourteen states had established the eight-hour day for children. Since then several others have joined the group. Many have set the limit at nine hours. In 1913 there were no states which had not taken some action in regard to the hours of labor for children.

State census bureaus.—In order to locate all children, some states have recently established permanent census bureaus, one of the duties of which is to keep the school census up to date. In 1909 such bureaus began work in New York in cities of the first class. Their early investigations disclosed the fact that over six thousand children in Buffalo and over twenty-three thousand in New York City were out of school unlawfully. That this was not peculiar to these cities was proved by the federal census of 1900, which showed that over one-third of a million children who, under the law, should be in school had been overlooked by the local authorities.

The labor of women: *The movement from the home to the factory.* — The revolution of the nineteenth century also brought

about remarkable changes in the environment surrounding the labor of women, and opened to them many new occupations. We have already noticed how women took up in the textile mills their old occupation of spinning. The same thing happened a little later in shoemaking. On the handmade shoes women had done much of the stitching at home. When the sewing machine entered the factory, the women followed.

Similar changes might be illustrated by many other industries. Women have passed from home hat trimming to wholesale millinery establishments. They used to make the taffy at home, but now they make the confections in the large candy factories. They prepared the dinner, waited on table, and did the washing for the household; and now they are doing the same things in restaurants, hotels, and steam laundries.

New employments. — The industrial revolution has also created new kinds of work for women. The telephone, for example, brought thousands of girls and women into the exchanges after they had shown an adaptability superior to that of men and boys. The department and ten-cent stores have also claimed their multitudes of women workers.

The sweated trades. — The growth of the ready-made garment trade has greatly affected the conditions of women's work. During the early years of the last century the "sweating system" began. This is the name applied to a method of contract work done in the poorest homes or in the overcrowded tenements of the cities. Oftentimes entire families or groups of families are engaged, including men, women, boys, girls, and even little children not over four or five years of age. A dozen or more may work in a single small, poorly ventilated, poorly lighted room — the workshop, the dining room, the kitchen, and the bedroom of the entire group. The work is all done by the piece. The rates are so low that the most intense application from early morning until late at night is necessary to earn enough to keep soul and body together.

The sweating system began in the men's garment industry. Early in the century men began taking contracts for clothing for

the army and navy and for the Southern trade. Upon this work women were employed as stitchers. By 1831 it is said that there were in the tailor shops of Boston three hundred men, one hundred children, and thirteen hundred women. About the same time the villages around New York City within a radius of a hundred miles were busy with men and women engaged upon the ready-made garment work for the wholesalers of the city. By 1860 the manufacture of women's cloaks and boys' garments had begun, and grew rapidly during the war. Since about 1880 the trade has broadened so as to include practically every kind of garment worn by men, women, and children. By the end of the century the sewing machines had been taken from the tenement houses to factories. There the machines were operated by power, and hundreds of the workers were assembled to run them.

The wages of women: *Insufficiency.* — Where women have left the work of the home for similar work in the shop or factory, they have usually done so for small pay. In 1830 Mathew Carey wrote that of eighteen thousand women workers in New York, Boston, Philadelphia, and Baltimore, twelve thousand could not earn over one dollar and a quarter a week. The New York Tribune said in 1853 that there were hundreds of tailoresses and seamstresses who, if steadily employed, could average not over ninety-one dollars per year. In 1869 eight thousand sewing women in Boston were earning but twenty-five cents a day when they worked. In 1887 there were nine thousand women in New York City and five thousand in Chicago who got less than three dollars a week. At later periods still, investigations of the Federal Labor Bureau disclosed the fact that there were many thousands of women workers all over the country whose wages averaged less than six dollars per week. Various reports of Minimum Wage Commissions of different states have added further evidence of like nature.

Minimum-wage laws under the police power. — It was such facts as these published during the last twenty-five years that induced some states finally to attempt a remedy by legislation.

As in the case of children, the public has gradually come to look upon its women workers somewhat in the light of wards of the state in need of special protection. Women were less able than men to protect their own interests through effective unions, although unionism, which hardly existed among them before 1909, has had a rapid growth since that time. The states have, therefore, begun to deal with the problem as a matter of race protection.

The right to make laws regulating hours, wages, and other conditions of labor rests upon the police power of the states. Under this power, recognized by all courts as superior even to constitutional prohibitions, the states may take measures to protect the health, the safety, and the morals of the people. The opponents of restrictive laws took their stand upon certain provisions of state and federal constitutions — the so-called “personal liberty” clauses. These included, as often interpreted, the right to work or to make contracts to work as one chose, and also the right to protection of property. It was held, for example, that a restriction of the hours of labor was an infringement of one’s constitutional right to choose for himself the conditions under which he should earn his living. Thus, it was the police power versus the personal-liberty clauses, or, in other words, collective restriction of the individual versus individualism, in the struggle for legislation for the better protection of the working man and woman.

Legislation in the United States. — The first minimum-wage laws were enacted in New Zealand (1894) and the Australian Commonwealth of Victoria (1896). It was not until 1912, however, that such legislation began in the United States. The first law of the kind was passed in that year by Massachusetts. Within three years this example had been followed by ten other states, and a majority of the rest have the matter under consideration. With one or two exceptions the laws enacted establish (1) permanent commissions to administer the acts, and (2) special, or advisory, wage boards composed of employers, employees, and representatives of the public to investigate a par-

ticular industry. These boards have to study the cost of living, the wages, the effects that an increase would have upon the industry, and in some cases (California, Oregon, Washington, and Wisconsin) the general conditions in the industry affecting health and morals. A great majority of the laws apply also to minors. In California and Oregon, the two states that have gone farther in this kind of legislation than any of the others, the commissions may fix the hours of labor, and have exercised this authority in a number of cases.

Constitutional difficulties of enforcing the laws. — In order to avoid constitutional difficulties, the laws of Massachusetts and Nebraska¹ give the commissions no power to enforce their orders. A critical public opinion, it was hoped, would supply the compulsory force lacking in the law. Because of this non-compulsory feature, these laws have been called "toothless." The other states gave their commissions full power to enforce their decrees. When they came to exercise their authority instant legal battles ensued. Two of the states (Ohio and California) amended their constitutions, thus removing the last obstacle, although in 1920 Ohio still had no law. There still remained, however, the obstacles presented by the federal Constitution. These seem to have been almost surmounted in 1917 when, by a tie vote, the United States Supreme Court failed to overturn the Oregon law.

Safety, sanitation, and health measures. — The old-fashioned factory was poorly ventilated, poorly lighted, overcrowded, and often unnecessarily dangerous to life and limb. Since 1880 great improvement has come in this respect. Within this period most of the industrial states have passed laws regulating ventilation, lighting, and sanitary arrangements. Provision has been made for the guarding of dangerous machinery, for sufficient spaces between the machines, and for protection against open elevators, trapdoors, and the like.

There has also been legislation to prevent industrial diseases. Such, for example, are the laws requiring devices for the in-

¹ Repealed.

stant removal of poisonous gases and of dust, and those forbidding the eating of food in rooms where such substances as white lead or arsenic are present. Such laws as these have readily passed the constitutional test.

Hours of labor: *Children.* — The regulation of hours of labor by law has also met with constitutional difficulties. In general, employees have been divided by the courts into three classes. Children under sixteen comprise the first class. As to them there has been little question within recent years. No one now doubts that the safety and general welfare of the state and the health and morals of the people must be safeguarded by the limitation of children's working hours.

Women. — In the second class were placed the women wage earners. It took forty years to establish the right of the states to regulate the hours of women's work. A Massachusetts ten-hour law for women and children was upheld by the Supreme Court of the state in 1876, but long after that time adverse decisions continued to be made elsewhere. Those who opposed the laws did so on the ground that they were a restriction of the freedom of the individual to work, and an abridgement of the privileges and immunities of citizens of the United States. On these grounds the Illinois Supreme Court declared (1895) unconstitutional an eight-hour law for women.

Since that time, however, there has been a great change in sentiment. Popular opinion more and more came to the conclusion that the number of hours which women worked did affect the morals and the health of the people and the general well-being of the state. By 1910 thirty states had established legal hours for women. The Illinois Court, which had condemned such a measure in 1895, sustained a ten-hour law for women in 1910. Since then numerous decisions elsewhere have done likewise, and in 1908 the Oregon ten-hour law, after passing the gauntlet of the state courts, was sustained on appeal by the Supreme Court of the United States.

Men. — To the third class belong adult males. Few states have ventured to limit the hours of this class of workers. The

only exceptions until recently were in case of extra hazardous, or of public, employments. In 1896 Utah passed an eight-hour law for miners, and this was later sustained by the state and federal supreme courts. Up to 1916 thirty states had passed similar legislation. Moreover, a large number have limited the hours upon public work. Congress had, in 1892, already passed an eight-hour law for employees upon government work.

Two important decisions were rendered by the United States Supreme Court in 1917. One of these sustained a federal eight-hour law for train men, and the other upheld the Oregon ten-hour law for all employees, regardless of sex. These decisions will doubtless have far-reaching effects in putting an end to the long controversy over the right of the lawmaking bodies to limit the hours of employees.

The hazards of industry: *The dangers of modern industry.* — The industrial revolution of the last century brought with it a greatly increased casualty list. Machinery was geared so as to run at higher and higher speed; a perfected organization and the division of labor increased the monotony of the work. Speed and monotony brought early fatigue, and with fatigue came the accident. Furthermore, the growth in the size of all kinds of enterprises made it more and more difficult for an individual to look out for himself. He who entered industrial life had to brave the chances of accident due not only to his own fatigue and carelessness, but also to the acts of any one of the hundreds of his fellow employees. The individual, therefore, was deprived of much of his power to protect himself.

Not only in new ways of doing old tasks did the revolution add to the dangers of industry. It brought with it also many new employments of extra hazardous nature. The steam engine is one of these new dangers, and electricity is another. Others are employment on railroads, in deep mines, and on structural-steel enterprises. Added to these risks are what have been called occupational diseases. Many of these are entirely new ailments following in the wake of new industries.

Doctrine of individual responsibility. — Up to about 1880 it was taken for granted that an individual injured or made sick by his work should pay the bill. When death or permanent injury followed, people thought their responsibility ended if, by providing almshouses or other forms of relief, they saw to it that the family deprived of its wage earner did not quite starve or freeze to death.

The doctrine of public responsibility. — As the laissez-faire doctrine began to give way, however, the feeling grew that an individual injured or diseased by the work he was doing should not have to bear all the costs. It came to be seen that if people demanded the products of an industry, then they should be ready to stand all the expense instead of merely part of it. Gradually, workers came to be regarded somewhat as soldiers, the risking of whose lives benefits not themselves only, but all the people as well. It came to be more and more the belief that a man wounded or sick in industry had earned his doctor's bills just as surely as the wounded soldier had earned his hospital care. It further came to be believed that he had earned a pension for his family if he were killed. So far has this line of thought gone that in some countries it is now held that the charge against an industry — and ultimately against all the people — should include payments to men temporarily out of work through no fault of their own, and pensions to those who have grown old in the service.

Accident insurance in foreign countries. — The first country to provide for accident insurance was Germany in 1884. Within the next twenty years this example was followed by practically all the countries of Europe. England began in 1897. Provision against poverty from accident was followed rapidly by laws compelling insurance against sickness, old age and invalidism, and unemployment.

Accidents in the United States. — Although the United States has been far behind other countries in establishing insurance systems, yet nowhere else was there greater need. In none of the other great industrial countries has the destruction of life

in industry begun to approximate that in the United States. The following table shows how the record of fatal accidents in this country compares with that elsewhere:

FATAL ACCIDENTS IN COAL MINES PER THOUSAND EMPLOYED

	YEARS	NUMBER KILLED PER THOUSAND YEARLY
United States.....	1902-1906 inc.	3.39
Prussia.....	1900-1904 inc.	2.06
Great Britain.....	1902-1906 inc.	1.28
Belgium.....	1902-1906 inc.	1.00
France.....	1901-1905 inc.	.91

Since the dates given in the above tables the casualties of the other countries have fallen very largely, while those of the United States have remained at about the same level. Figures given by the United States Bureau of Statistics show an average accident rate from 1896 to 1912 of nearly five per thousand of those who worked in the mines for at least three hundred days in the year. On the railroads of the United States, between the years 1888 and 1905 inclusive, nearly forty-four thousand six hundred employees were killed and over six hundred and forty-seven thousand were injured.

Compensation under the common law. — In spite of the number of casualties in industry, damages were seldom paid. Practically the only way in which an employee could get compensation was under the common law, which permitted the injured man to collect only in case the injury was caused wholly by the negligence of the employer. This placed upon the employee the necessity of proving the negligence by means of a lawsuit and of facing the delays and expense of legal action, to say nothing of the ill-will of his employer.

The employer's defenses. — In the course of the development of the common law three lines of defense against such suits had been evolved, any one or all of which the employer might use. These were known as the "assumption of risk," the "fellow-servant," and the "contributory negligence" defenses. Using the first of these, the employer had only to show that he

had taken reasonable precautions to prevent accidents. The court would absolve him from responsibility on the ground that the employee knew of the dangers of the industry and assumed the risk of them by accepting the employment. By the second defense, if it could be shown that some fault of a fellow workman had been partly responsible for the injury, even though the employer might have been proved negligent, yet the injured man could not collect. His only recourse would be to sue the negligent workman. The third line of defense was for the employer to show that the injured man had been negligent himself.

The employer's defenses and the Industrial Revolution. — It will readily be seen that the employer's defenses were remnants of an outgrown age. Assumption of risk, contributory negligence, and fellow-servant doctrines were reasonable enough when one or two men worked together with simple hand tools. They were quite impossible, however, when thousands worked together in the midst of whirring machinery. In continuing to assume that a man under such conditions was able to pick and choose the risks he would take, the law had failed to keep up with the tremendous industrial changes that had taken place.

Destruction of the employer's defenses. — It was only after the twentieth century came in that the United States began to wake up to the problem of the industrial accident. During the years from 1900 to 1913 some twenty states deprived the employer of the fellow-servant defense in many industries, most commonly in the mines and on the railroads. In 1910 New York State placed the burden of proving negligence upon the employer and removed it from the employee. Employers, thus deprived of their armor, began to insure their employees, the defense of suits being assumed by the insurance companies.

The responsibility of the industry. — The laws passed during this decade did not reach the heart of the matter because they did not keep the cases out of the courts. Somebody's negligence had still to be proved. One investigation alone, however, showed that in over fifty per cent of cases there had been no

negligence on the part of anybody. In other words, over half the accidents were the results simply of the inevitable risks of the industry. The consequence was that only a very small percentage of those injured received compensation, even after the destruction of the employer's old defenses. In 1905 only one-third of the money paid by the employers in premiums to the insurance companies ever reached the injured men.

Workmen's compensation laws in the United States. — As soon as legislators recognized the fact that most of the accidents were caused, not by any individual, but by the vast, whirring, bewilderingly complex industrial organization, their task was comparatively simple. Since industry was the guilty party, no proof of blame was necessary. Courts and all the tangle of legal mysteries were eliminated. The laws had merely to say that the industry must pay for all the injuries. In other words, society as a whole came to recognize that it had been receiving the benefits of the industries without paying the entire bill.

Since 1910 the states have made rapid progress in workmen's compensation laws. The federal government had taken the step two years previously in a law requiring compensation for all injuries received in government factories and arsenals, on reclamation projects, and on the Panama Canal. In 1909 a Montana law required the payment of three thousand dollars for death in the mines — the burden to be borne in part by the industry and in part by the employees. Between that date and the end of 1916 thirty-seven states had written compensation laws upon their statute books.

Most of the laws have certain main features in common. In the first place, they remove all the old common-law defenses of the employer. In case of death or permanent disability they provide for a maximum payment, to be made in from three hundred to five hundred weekly installments. Thirdly, they provide for weekly payments during temporary disability. For certain specified injuries, such as the loss of a hand or an eye, they establish fixed lump-sum payments. In a large majority of cases provision is made for medical attendance. The

weekly payments range from fifty to sixty-six per cent of the injured man's average weekly wage.

Generally the employers are allowed to choose the methods of insuring themselves. In a few states there is a state insurance fund to which all employers contribute and from which the payments are made. Many states permit the employers to form mutual insurance groups, if they so desire. If they prefer, however, they may insure in ordinary accident insurance companies. In some cases the employer may assume his own risks if he can show his ability to meet them.

Summary of the era of combination. — The Civil War, although it was a disaster long felt in the South, hardly interrupted the economic growth of the country elsewhere. On the other hand it afforded a stimulus to rapid and large-scale production. By the elimination of Southern members from Congress, moreover, it permitted the government to follow out an unobstructed policy involving protective tariffs, aid to the building of railroads, homestead and other land acts, federal control of banking, the payment of the national debt in gold, and, finally, the establishment of gold as the basis of the national currency.

The lessons of rapid production were vigorously applied everywhere, except in the conquered South. For the first time the country began fully to comprehend the greatness of its natural resources other than the soil, and intense competition set in to develop these resources and to supply the domestic market, which was rapidly mounting to dimensions beyond the dreams of men. Railroads were extended to the Pacific coast, and within twenty years after the close of the war, the whole country was covered with a steel network bringing every occupied section into communication with all the others. Meanwhile, cheap steel and inventive genius were otherwise adding to the efficiency of the railroads and decreasing the costs of transportation.

Manufacturing, therefore, spread west, — to the old Northwest, to the states west of the Mississippi, and finally to the South

and the Far West. The nation changed its rural character, and the capital invested in manufacturing, trade, and finance soon surpassed the investment in agriculture, while the population of towns and cities at last caught up with the country population. This change took place very rapidly after about 1890, when most of the available cheap lands and other resources had been appropriated and there was no longer a "frontier" of natural resources.

The closing of the frontier brought its new problems — the problems of how to maintain that equality of opportunity which Americans had learned to revere, and the problem of conserving the natural resources. The former of these questions arose when fierce and destructive competition drove the great industries to combine through the pool, the trust, the holding company, and other means. While this concentration of capital seemed inevitable, the methods pursued in securing control were oftentimes so contrary to American ideals of fair play, and, even at best, so often resulted in cramping or destroying the opportunities of the individual, that opposition both to the methods and to the results attained became widespread. The opposition at first took definite shape among the Middle Western farmers, who believed themselves mulcted by the railroads and other distributing agencies in the disposal of their products. The result was the formation of the Grange and the passage of the Granger legislation, followed later by attempts at farmers' cooperative distributing associations and last of all by the program of the Nonpartisan League.

The Granger movement, unsuccessful in itself, started the country upon an era of legislative regulation of industry. State railroad boards were gradually set up, and the first Interstate Commerce Law was passed in 1887, to be followed by numerous acts between 1900 and 1920 enlarging the federal power over the roads. Meanwhile most of the states enacted antitrust laws, and the Sherman Antitrust Act was passed in 1890. After this time the agitation for better control of the great combinations went on with vigor, resulting in the establishment of the

federal Bureau of Corporations, the Federal Trade Commission, and the passage of the Clayton Act. The events of the period may be considered to constitute another revolution in the turn of economic history, — the combinations being the antitheses of individualism so ardently preached in the early years of the century, and the movement for regulation being likewise a departure from the doctrine of *laissez-faire*.

The years between the end of the Civil War and the close of the century brought to an end, through the establishment of gold as the standard of value, the question of a deficient currency, which had troubled the people of the country since the beginning of colonial days. The first step in this process was the passage of the National Banking Acts during the Civil War, thus putting an end to the wild-cat currency of state banking. There remained, however, the question of the greenbacks, and then came the problem of silver. The crux of both problems lay in the contention that the value of money was derived from the fiat of the government and that the intrinsic value of the commodity of which the money is made mattered little. The specific occasions giving rise to the struggles over the currency were the question of retiring the greenbacks, the proper medium for the payment of the national debt, the proper agencies for the issuance of money (whether banks or government), the demonetization of silver, the low price of agricultural commodities for the twenty years prior to 1896, and the decline in the price of silver.

While the struggles over the currency were taking place, banking institutions were responding to the trend of the times. They gradually enlarged their resources by combination. Their functions widened also, especially after 1895 when the enormous demands of the enlarging industries made of the banker the organizer of industry as well as its financial backer. So enormous grew the demands upon the resources of the banks, indeed, that about the close of the century a study began of how to free the banks from some of the shackles imposed by the National Banking Acts. The outcome of this study was the

passage of the Federal Reserve Act, having for its main purposes the creation of a more elastic and mobile currency and a more equitable distribution among all sections of the financial resources of the nation.

This period saw the final absorption of the farm lands of the country, a movement hastened by the Homestead Act. It saw the rise and decline of the cattle range, and the development of the great wheat fields like a fringe around the Western desert. In this period, too, farmers were freed from the bonds which isolation once imposed. Railroads, the spread of the city market, and refrigeration made it possible for the farmer to raise almost any product, anywhere, and yet be sure that it could be brought to market in good condition. He, therefore, became a business man, specializing at will in whatever promised most success. No longer did he have to produce all he needed; the farmer as a jack-at-all-trades had passed away.

The soil at last became valuable to Americans. As a result of the closing of the frontier, it became necessary to get the most out of what was occupied. As a business man and a specialist, it was necessary that the farmer acquire all the knowledge possible bearing on his numerous problems. Hence, the period brought the state and federal governments more and more into the field to promote agricultural education. With similar purposes in view, farmers' publications and organizations multiplied, so that the farmers more and more became scientists in their field.

Nevertheless, the problems of rural life were not ended. The closing of the frontier brought high-priced land and farm products and, therefore, joy to the owners of land. High-priced lands brought America face to face, however, with the problem which impelled the people of Europe to come to its shores — the question of how the landless are to get land; the question of landlordism and tenantry, of peasants and of the agricultural laborer.

After the Civil War the real labor problem began. It became a problem because workingmen had to meet the changes which were taking place. The pressure grew more intense as the lands

in the West gave out and ceased to afford an outlet for discontent. Labor organized, therefore, so that the workingman might better contend with the organization and concentration of capital, and with the leveling process wrought by machinery. The growing opportunities for information and education had made Americans unwilling to fit into a niche and stay there, and caused them always to be looking for something better for themselves and their children.

During and after the war, therefore, we find labor organizations, both local and national, rapidly increasing in number. These were followed by attempts to organize all labor into one great body, first the Knights of Labor and then the American Federation of Labor.

After much experimenting, the American Federation of Labor, and other organizations as well, finally settled on one principle which they deem necessary to the success of labor organization — the closed shop. Put in another way, this meant that labor had adopted the policy of the capitalist, and was attempting to secure a monopolistic power over industry through the absolute control of all labor. It is for this reason that all other ends sought by labor unions have become subordinate to the closed shop; for with the latter established, it was believed that the demands of the unions could not be denied.

While the conservative American Federation of Labor absorbed the major part of unionized workingmen, there has always been present among the workers an element of more radical views. Such men, at the present time best represented by the Industrial Workers of the World, were not content with the slow and opportunist methods of the well-established labor organizations, but looked ahead to the destruction of the capitalist and the control by labor of all industry. The methods of the radical organizations have always been the methods of violence. The aim of the I. W. W. is the "one big union" into which all labor shall be absorbed. With this established, the universal strike would soon place labor on its throne of power.

Largely through the influence of the unions, much legislation has gone upon the books since the Civil War with the aim of bettering the conditions under which men labor. Children have been taken from work and put into the school; the hours of youth and of women have been regulated; factories and other places of labor have been made sanitary and comparatively safe. More and more provision has been made for sickness, old age, and injuries. Gradually the weight of public opinion has changed the attitude of the courts, and constitutional obstructions to various phases of social legislation have been swept away.

From the feeble beginnings made by the heroic colonists along the Atlantic shore there has grown the United States — an industrial and political giant among all nations. Out of the simple household system has come the tremendous and almost fearfully complex organization of the present day. As we look back upon the centuries through which this great transformation has been brought about, we can but sense the thrill of romance in the undertaking and the accomplishment. The prizes to be won were great, but greater still were the courage, the enthusiasm, and the fortitude displayed by the multitudes in their quest for the prizes. The great wonder, after all, in American life, as, indeed, is the case in the history of any great nation, is the spirit of the people, the national soul which directs them as they meet with difficulties and dangers. Doubtless mankind will always have its perplexing problems to face, but down deep in the great heart of this nation may there abide the fixed purpose to bring to a reality that dream of America which, through the centuries and to the present day, so many millions of men have dreamed.

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QUESTIONS

1. Are all men born with equal opportunity? Show that the handicap of an unequal start is more difficult to overcome now than in 1850. Show how the dangers of industry have increased during the last century.
2. What are the reasons for restricting the labor of children? Tell of the development of the laws for compulsory school attendance. Should boys who do not want to go to school and who loaf through their school course be compelled to go to school?
3. How has the industrial revolution affected the work of women? Trace the development of the garment trades.
4. Why have women's wages always been so much below those of men?
5. What arguments can you give for and against minimum wages by law? How can a business be conducted profitably if outsiders fix the

wages? What is the police power, and how has it been applied in labor legislation? Describe the powers of minimum-wage commissions. Will minimum-wage laws result in there being fewer opportunities for women to work? Would you advocate a minimum wage for a woman who does not earn even the minimum?

6. What were the difficulties in the way of establishing hours of labor by law? Should an individual be restricted to eight or ten hours of labor if he wishes to work longer? Is it possible to shorten hours so as to limit production below the needs of the people? Does the work of the modern woman in the industries endanger the future of the race more than the work of the women in the household did a hundred years ago?

7. What results have accompanied the industrial revolution in the matter of danger to life and limb? Why are injuries to workingmen more common in the United States than in foreign countries? What used to be the employers' defenses in case of injury to a workingman? Why should not the question of compensation for injury be left to the courts? Are there any hours in the day when accidents are more likely to occur than at other times? (See GOLDMARK, *Fatigue and Efficiency*.)

8. Show how the industrial revolution shifted the responsibility for accidents. What progress has been made in the United States in dealing with the problem of compensation for injury? What effect will the kind of legislation discussed in this chapter have on prices paid by the consumer? How can the industries of a state that has an advanced code of labor laws compete with the industries of a state that has a less advanced code or none at all?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that minimum restrictions on the labor of children should be made uniform throughout the country by federal law.

2. Resolved that the wishes of the women concerned should be consulted in all proposals to limit the work of women.

CHAPTER XXXI

THE UNITED STATES AND THE GREAT WAR

- The United States in the war
 - The problem of credit and production
 - Organizing industry
 - Government control of industries
 - Labor
- General effects of the war
 - Economic expansion
 - Prices
- Effect on industry
 - The iron and steel industry
 - Textiles
 - Automobiles
- Effect on agriculture
 - The stimulus of war
 - Agricultural depression
- The advance of labor
 - Wages
 - Working conditions
 - Financial power of labor
 - Labor banks
 - Efficiency of labor
 - Strategic position of labor
- War finance
 - Currency
 - Taxation
 - Loans

The United States in the war: *The problem of credit and production.* — The first effect of the World War upon the United States was an increased demand for our resources. For years Europe had been taking our copper in anticipation of a struggle which somebody must have foreseen. For months before July, 1914, our gold had been crossing the Atlantic, and when the war opened European owners of American securities began to

offer them for sale here, so that the stock exchanges had to close to forestall a panic. Soon the agents of many of our great industries were in France and England, and the agents of those governments were here making contracts for war supplies. Further to strengthen their credit, in the fall of 1915 British and French bankers secured a loan of five hundred million dollars from American bankers. All of this was to be spent in the United States. Thus began four years of tremendous buying of American goods.

The leading commodities in demand were steel, explosives, oil, copper, wool and woolen goods, boots and shoes, breadstuffs and meat, horses and mules, automobiles, lumber, agricultural machinery, and ships. By the end of the first year practically every industry connected with the production of any of these commodities had begun to speed up. Plans were being made for expanding plants already in existence and for building new ones where none had been before. Manufacturing cities became inflated with a transient population producing war supplies. Idle shipyards took on new life, and old tubs, once worthless, returned fortunes to their owners. Night and day the woolen mills and shoe factories were rushing out orders, for soldiers wear out suits three times and shoes five times as fast as civilians.

It was mainly the credit of Great Britain that kept the Allies going for the first two and a half years. That of France and Italy had vanished long before. When the United States came into the war in April, 1917, England's resources, too, were about at an end. The first great contribution of the United States to the Allied cause, therefore, was the reestablishment of its credit. Within two years the government of the United States had lent to Europe, chiefly to England, France, and Italy, ten billion dollars, and in addition had borrowed over twelve billion for its own uses.

Most of these billions went to buy American products, thus further stimulating our heavily taxed industries and temporarily threatening them with chaos. The problem was how to take over into the Army and Navy four million men from the in-

dustries and while so doing to increase production swiftly, for hourly the cry from Europe grew louder that we make haste. That we withstood the added strain was due to improved organization of industry, to concentration on the essentials, to substitute workers — women, sometimes children, and men who normally never worked — and, finally, to appeals to all the people to save and lend. It can safely be said that the voluntary, enthusiastic way in which the vast majority of over a hundred million people contributed their mites was one of the greatest factors in bringing success to our war measures. The most potent factor, however, was the concentration of power in the hands of one person — the President. The end of the war found under President Wilson's control practically every industry in which men could engage. Never was monarch more absolute.

Organizing industry. — Before we entered the war the Naval Consulting Board, composed of leading scientists, had made an inventory of our resources. This work was continued by the Council of National Defense, created in 1916. The War Industries Board, a committee of the Council of National Defense, was established in 1917. Early in the following year this Board, under the chairmanship of Bernard Baruch, a leading financier, was made independent and worked under the direct authority of the President. It was made up largely of scientific and industrial leaders, serving without pay and commonly known as the "dollar-a-year" men. Before the end of the war the War Industries Board, working in coöperation with others, had taken practically absolute control of the manufacturing industries of the country. In addition Congress gave the President control over food and fuel, the financing of industrial undertakings, transportation facilities, ships and shipbuilding, imports and exports, and the settlement of labor problems and policies. This control the President exercised through appointed councils, boards, and administrations, usually made up of two parts, one official, the other unofficial or advisory. The unofficial members were ordinary citizens, but experts in their

own lines. The official body generally consisted of one or more cabinet members and agents of the Army and the Navy. Thus, the Council of National Defense officially consisted of six cabinet members, but there was an advisory commission of civilians that made all the necessary investigations and recommended the course of action that the official body was likely to



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BURNING SUPERFLUOUS SHIPS

Some of the ships built by the United States government for war purposes were found useless in time of peace.

take. The War Industries Board was made up in large part of civilian experts, and the Railroad Administration was surrounded by some of the greatest and cleverest railroad men in the world. The Food Administration and the Fuel Administration also had their unofficial experts, and so on throughout the list. Thus the government and the Army and Navy made use of a huge unofficial cabinet of financiers, manufacturers, transportation experts, scientists, and labor leaders.

Government control of industries. — As an illustration of how the economic life of the nation forsook the customary ways of peace and adopted the single aim of winning the war, let us consider first the manufacturing industries. In ordinary times the manufacturer works out his problems for himself. During the war, however, he found that he could not choose his course of action freely as had been his wont. He found, for example, that in spite of an overwhelming rush of orders, he could not raise prices at will, or concentrate upon the making of goods in which there was the greatest profit, or rush ahead the orders of the highest bidders. If he attempted to raise his prices, the War Industries Board might intervene and often did. It is true that the Board did not usually act arbitrarily, but only after consultation with the representatives of the industries. The point is, however, that the prices were fixed below what they would have been had there been no restriction. Steel and copper were among the commodities the prices of which were so established. Nor might a manufacturer make just what he wanted to make and for whom he chose. He was told what was wanted and to whom to ship his product. When France began to run short of shells for her "seventy-fives," two great steel concerns were told to concentrate on these, and within three weeks the first shipments were arriving in France. Manufactures were classified, and producers were compelled to see that class A goods were produced by a set time, even if classes B, C, and D were delayed. Indeed, for some industries the war was a time of disaster, for nonessentials were in many cases practically forbidden altogether. Obstinacy on the part of an individual soon vanished when cars and coal were denied him by the Railroad Administration and the Fuel Administration.

The hand of the government was felt in the woolen and leather industries. It secured control of the stock of wool and doled it out for soldier and civilian uses. Shoe manufacturing was similarly limited. A great saving was made here in cutting down the number of styles. This saved not only material but also time, and released many workers for other jobs.

Millers and bakers were severely restricted. Snow-white flour disappeared. Millers were compelled to make coarser flour, thus using more of the wheat grain. Bakers had to mix other materials with wheat flour. Retail grocers were subjected to regulation, and customers were limited in the amount of wheat flour that they might buy. Every family was also restricted to a certain amount of sugar a week, and substitutes for this commodity were urged upon them. To insure a better control of millers, bakers, and other dealers in foodstuffs, the government compelled them to take out licenses. Breaking the regulations meant the loss of the license and of the right to do business at all.

To save fuel and to lessen congestion on the railroads, many factories not essential to the war were shut down. The manufacture of jewelry may be mentioned as one of the nonessential industries. For a space of several weeks the war government, in order to relieve the congestion on the railroads, established certain days of each week as "coalless" days, closing up places of amusement, office buildings, and many factories. For two years building almost ceased. Large works that had been projected were abandoned for the time, and even the making of repairs was held to small proportions.

Labor. — In peace times manufacturers adopt their own labor policies, and laborers go where they will. In fact one of the manufacturer's hardest problems is to keep down the cost involved in changing help. Labor turnover is greatest at times when industries are running at full blast. Employers then compete to attract to themselves laborers from somewhere else. Soon after we entered the war this difficulty became so great that it threatened to disrupt industry. A plant might lose a third of its men overnight, forcing the management to take on hundreds of new men every day. In addition there were constant strikes and threats of striking.

These conditions the war government set about to cure. In the first place the draft and the Army intelligence tests gave a rough idea of the capabilities of some five million men. Men

found to be especially valuable for certain essential industries were not drafted into the Army, but were put to work. This alone furnished an incentive for many a man to stay on the job when he might not have done so at another time. The War Industries Board also prevented manufacturers from trying to entice men away from one another. Various boards under the War Labor Administration sought to lessen the labor turnover. A special commission investigated the activities of the I. W. W. in the Far West with a view to removing the causes of discontent. One board worked out a plan for national labor policies, which, had it been carried out, would have tended to equalize conditions everywhere and thus lessen the temptation to leave one job in the hope of getting a better one. Another board had the task of settling labor disputes, and numerous differences were thus composed. Perhaps what did more than anything else to quiet labor difficulties for a time was the "work, or fight" slogan. When the nation finally set its teeth in a will to end the war quickly, the loafer's job was not a pleasant one. Never in the history of the country had everybody been working as hard as during the last year of the Great War.

General effects of the war: *Economic expansion.* — We must now consider some of the effects which the war had upon the fortunes of the people. Let us start by saying that it transferred a large part of the wealth of the world to this country, that this wealth has, on the whole, been quite generally distributed, and that, barring temporary depressions, future years seem likely to bring such prosperity as no other people has ever seen. At the beginning of the war a newspaper editorial made this comment: "In its ultimate relations anything resembling a general European war would seem likely to guarantee that the economic future will belong to the American continents, especially to North America."¹ This prophecy has already been fulfilled. American finance and industry stand supreme in the world. That we shall be dislodged from our commanding position in the near future seems extremely unlikely.

¹ *New York Sun*, September 12, 1914.

The impetus of war activity in industry continued, with a temporary lull soon after the armistice, until the summer of 1920. The production of copper was about one billion two hundred million pounds in 1913; it averaged over one billion nine hundred million pounds during the war years 1915 to 1918. The wheat crop for the years 1912 to 1914 averaged about one hundred fifty million bushels more than for several years before, but forty million bushels less than for the period 1915 to 1920.



GRAPH OF THE COURSE OF EMPLOYMENT, 1914 TO 1922

The number of beef cattle in 1914 was about thirty-six million and of hogs about fifty-nine million; in 1918 they numbered respectively forty-five million and seventy-one million. Of all the food crops we were producing over fifty-four million more tons in 1918 than in 1914. The average pig iron production for the years 1912 to 1914 was twenty-eight million tons. It averaged nearly thirty-six million tons from 1915 to 1920 inclusive. Before the war unfilled orders on the books of the United States Steel Company would range between four and eight million tons from month to month. During the war years the range was roughly from eight to twelve million tons.

Bank clearings more than doubled. The graph on page 579 shows the rise in the employment of labor.

Prices. — Industrial activity was accompanied by a great rise in prices. Foreign demands, the cessation of building, the rise in wages, the increase of money in circulation and of credit made possible by Liberty loans and the importation of the gold of the world, and the growth of taxes contributed to this result. Free spending, a habit which grew upon the people as their incomes increased, and speculation in houses, land, and commodities also had much to do with the unreasonable heights to which the cost of living rose until two years after the end of the war. For a long time people accepted as a matter of course the salesman's plea, "Better buy now for it's sure to go higher."

Nevertheless, prices could not rise forever. Many industries had become overdeveloped. It is estimated that forty per cent of our coal mines, sixty per cent of our steel mills, and sixty-five per cent of our shoe factories at the end of the war could have produced all our normal needs. The turning point was reached in July, 1920, when the cost-of-living index stood at 216 as compared to 100 in 1913. Then, as if from out of nowhere, came a revolt of the people — the "buyers' strike" — against the prices of goods. Speculation, too, suddenly slackened when the Federal Reserve increased its rates on rediscounts and brought the period of easy money temporarily to a close. Top-heavy prices began to crumble. Merchants, having bought heavily for the future, found their shelves loaded with high-priced goods which nobody would buy. Manufacturers, running their plants at top speed on orders already booked and on expectations, suddenly met not only with an end of new orders, but also with an avalanche of cancellations. They often found, moreover, that no money was forthcoming for goods which had been made and delivered. This was especially true of concerns such as manufacturers of farm machinery and fertilizers, and mail-order houses, doing a large business with the farmers of the South and West, whose products had first felt the drop in prices. For two years, therefore, came the business of writing down

inventories, wiping paper profits from the books, and going through receiverships and reorganizations. During the four years 1920 to 1923 inclusive, the total liabilities in business failures amounted to over two billion dollars, almost as much as for the entire ten years previous. After this painful process, conditions again began to right themselves. By 1922 prices had become stabilized, and the dollar settled at a pre-war value of around sixty-five cents. Fortunate crops and other circumstances began to lift the farmers out of their difficulties, and industry and business once more took up their advance.

Effect on industry: *The iron and steel industry.* — From 1914 to 1920 there were almost uninterrupted increases in the production of pig iron and steel. Along with the increase in production went steady increases in prices also, until the United States government took hold of the industry. Before this event, however, steel billets had risen from below thirty to over sixty dollars per ton. Pig iron meanwhile rose from an average of about thirteen and a half dollars to thirty-two dollars per ton. Most of the companies, of course, reaped enormous profits. Out of the profits, or through new financing, large additions were made to their plants by the Bethlehem Steel Company and other great concerns. With this expansion the Bethlehem Company became a formidable and effective rival of the United States Steel Corporation. The production and profits of the latter were also tremendous, the net annual income averaging over one hundred seventy-seven million dollars for the years 1915 to 1918.

Textiles. — Of the textiles the woolen and silk industries felt the stimulus of the war most. The output of the woolen mills was limited only by the supply of raw material. The silk industry expanded because everybody was working and receiving high wages. Americans increased their wearing of silks at the expense of cheaper fabrics such as cottons, and the silk industry profited by the shift.

The cotton industry failed to advance with the other textiles. What progress was made took place in the South. Every-

where, however, the manufacture of cottons was affected by several adverse circumstances. The first of these was the ravages of the boll weevil, which for the last ten years has threatened to wipe out the production of raw cotton. This, together with the general conditions, resulted for some years in very high prices for raw cotton, so that people began to cut their use of the manufactured goods. Changes in style hit many mills that had specialized in certain lines. Cotton mills also suffered from the decline of prices which began in 1920. Loaded up with raw cotton bought at high prices, many mills were at once struck by a sudden fall in the price of the raw material and by a wave of cancellations of orders by the merchants. To cap their disasters a new fabric called *rayon* came upon the market. Rayon is an artificial product made by a chemical treatment of wood fibres. It looks somewhat like silk, and for those whose purses are not able to satisfy their silk appetites, it furnishes a cheaper substitute. The result has been that many cotton mills have taken to the manufacture of rayon fabrics.

Automobiles. — Statistics of automobile production for the last decade are out of date almost as soon as written. At the present time (1926) there are about twenty million cars and trucks registered in the country, a gain of about ten million in six years. Half a dozen concerns are each turning out yearly more than the entire annual output ten years ago. Among the more important causes of this growth are the bountiful supply of money in the United States, the greater spending power of the masses of the people, the American vacation and travel habit, the reduction in the prices of the cars, the time-payment plan of manufacturing concerns, and the large increase in the use of automobiles, trucks, and busses in business and transportation.

Automobiles steadily encroach upon the older methods of transportation. Busses have practically supplanted interurban trolleys, and have eaten largely into the suburban and through passenger service of the steam railroads. More and more, therefore, the railroads have been driven to installing bus lines

of their own for interurban service, and truck lines as feeders to their main-line freight service. Senator Cummins has stated that eighty thousand miles of steam railroads must soon be abandoned unless some way is found to restore them.

Along with the manufacture of automobiles has grown up a multitude of industries, almost, if not wholly, unknown fifteen years ago. These are the manufactures of automobile accessories. Among such may be mentioned bodies, wheels, tires, axles, bearings, and starting and lighting systems. The tendency of the industry at the present time, however, seems toward integration similar to that which took place at the beginning of the century (p. 397). Already the Ford concern controls iron mines, railroads, and steamship lines. Other companies have expanded so as to control the manufacture of the several grades of cars most in demand. In addition the larger concerns are taking over those which manufacture accessories, and as competition sharpens the strong will inevitably absorb the weak.

Effect on agriculture: *The stimulus of war.* — The farmers went through the common experience of rising demand and prices for their products and the consequent prosperity. Similarly, after we entered the war they felt the urging of the government for greater and greater production. In respect to wheat they also felt its hand in the fixing of the price.

AVERAGE PRICES ON THE FARM, 1919-1921

YEAR	WHEAT (Per bu.)	CORN (Per bu.)	COTTON (Middling per lb.)	INDEX OF PUR- CHASING POWER
1919	\$2.20	\$1.37	35.6¢	111
1920	\$1.43	\$.67	13.9	86
1921	\$.93	\$.42	16.2	67

Agricultural depression. — The business depression which began in 1920, however, struck the farmers of the Mississippi and Missouri basins and of the South sooner, and perhaps

harder, than it did other industries. In the first place the war had led to an overexpansion of agricultural production. Canada, the United States, and the Argentine had been straining for years to meet the demand for cereals, hogs, and cattle. This overproduction continued until the depression of 1920. The prices of the commodities that the farmers bought had risen, together with farm wages, and these did not come down for months after the fall in the prices of farm products. The farmer, therefore, was faced with the high cost of living and production and with low prices for what he sold.

But this was not all. The farmers, too, had contracted the habit of spending and of buying on credit. Expensive machinery, tractors, and fancy, thoroughbred stock were often bought at ridiculous prices with little cash and much credit. Nowhere were automobiles more common than in some of the best agricultural regions. When the decline in prices took place, many a crop would not pay for the cost of the car, let alone redeem the notes at the bank. The banks were thus compelled to foreclose, or to fail, or to renew notes as they fell due. They generally chose the last course, and for months did almost no new business at all, their resources being thus tied up in "frozen credits." Many banks, however, closed their doors forever, and thousands of farmers lost their farms.

Speculation in land also caused much trouble. War prices for food created war prices for land. Lands in the Mississippi and Missouri valleys, normally worth from one hundred and fifty to two hundred and fifty dollars per acre, shot up until they had doubled and trebled in price. A consuming fever raged to buy, and sell at a higher price. The one with a hundred acres would mortgage them to buy two hundred — all very stimulating to him who got in and out again while prices were going up. It was different when the speculator bought at the top and a few months later found that the two hundred acres would not sell for enough to pay off his debt.

An experience which Western farmers had often gone through before (p. 412) also added to their troubles. In the search for

wheat lands they went too far beyond the humid area into the semi-arid. In Montana especially there were two or three wet years and big crops. This tempted enlarged operations, financed on credit, by those who were on the ground. It also brought new settlers into the field. Then the dry years returned, the crops were failures, and only the debts and frozen credits remained.

For a period of three years much of the agricultural region of the Middle West was at a standstill. The banks waited for their money or failed. Farmers waited for equalization in prices. Merchants waited for the day when their customers could pay their bills. In 1924 the change came. A great wheat crop, accompanied by a failure of the crop in Canada, brought higher prices. Acreage had been reduced, and the general cost of everything had come down. Farmers began to pay their debts, the frozen credits slowly thawed out, and normal conditions gradually reappeared.

The abrupt drop in the price of cotton caused dismay in the South. Here, however, the depression was less severe. Cotton prices rebounded sooner than did the price of wheat. The South, moreover, has grown very rapidly along other lines. It attracts many people to its pleasure resorts. Industrially the growth noted elsewhere (p. 362) has been more marked since the war. Its agriculture is becoming more and more diversified, so that the old dependence on one crop is gradually disappearing. Of all the railroads of the country, some of the most markedly prosperous are those serving the South. One incident that has caused some disturbance has been a large emigration of negroes to Northern cities. For several years during and after the war thousands were making their way from their cabins on the Southern farms to the crowded quarters of cities like New York, Chicago, and Philadelphia. Many reasons have been assigned for this migration, the most convincing being the temptation of high wages and the ravages of the boll weevil.

The advance of labor: *Wages.* — The most obvious change that came to the ranks of labor during the last decade was a

universal rise in wages. The rise slowly followed the speeding up of so many of our basic industries. After the United States declared war, the increase became more spectacular. Nothing better than this could show how nowadays wars involve all the resources of nations. Armies and navies are now but small parts of a war. The making of the munitions and the supplying of the armies are the work of all the people. The great rise in wages is but one indication of the need for increased production.

Working conditions. — Much attention was also given to working conditions in order to get a whole-hearted coöperation. The eight-hour basic day became common. Intricate — and oftentimes expensive — rules and regulations were established to safeguard the interests of the workers. These were in some cases arranged within the industries themselves, but often a government agency stepped in to enforce them. The guiding principles set up by the War Labor Board were as follows: (1) no strikes and no lockouts, (2) recognition of the right both of the laborers and of the employers to organize, (3) no discharge for being a union member, and no coercion by the unions to compel individuals to join, (4) eight hours as the basic day, (5) the maximum of production. Allowing for the haste at which all things had to be done, the efforts met with great success. For labor the war years were an epoch.

After the war the unions set their faces hard against giving up any of the advantages which they had won. Many employers, on the other hand, had determined to get back some of the concessions which they had made. For two or three years strikes and lockouts were everyday occurrences. Labor in general, however, succeeded in holding to much of what it had gained. The peak of the wages, of course, could not be maintained. But while wages had eventually risen farther than the living costs, they were slower in coming down and did not fall so far. In fact many a wage scale is higher today than in war time or any other time in history. The net result has been a substantial gain for labor now that wages and prices have become more or less stabilized. One cannot go far without

being impressed with the greater diffusion of wealth and the higher level of prosperity that have been established among the rank and file of people everywhere. This is true even while it is also true that a few wealthy people have become vastly more wealthy than they had been before.

Financial power of labor. — In his book *The Present Economic Revolution in the United States*, Professor Carver writes of the financial power of labor. This gives a new slant to the labor question, but abundant evidence is produced to justify the term. Since 1912 savings bank deposits have grown from somewhat over eight billion dollars to twenty-three billion, and the depositors number nearly forty million. Life insurance figures tell a similar story. In 1900 the policies in force amounted to eight and a half billion dollars; in 1924, to over sixty billion. We have only to remember that savings banks and life insurance companies are the investing agents of the depositors and premium payers, who thus secure an indirect interest in vast fields of business enterprise.

Another evidence of the growing financial power of the average man, the man who works for a living, is to be found in the increase in the number of stockholders of corporations. In more and more cases the managements encourage such ownership. Employees of the General Electric, the United States Steel, the Bethlehem Steel, the Ford, the New York Central Railroad, and the Philadelphia Rapid Transit companies hold large amounts of their stock. These are but a few of a long list. Year after year some of these companies set aside a certain number of shares for sale to employees. Generally the stock offerings have all been taken and sometimes largely oversubscribed. One fourth of the employees of the New York Central, fifty thousand employees of the United States Steel Company, fourteen thousand employees of the Bethlehem Steel Company are stockholders. Ten million dollars' worth of the stock of the Philadelphia Rapid Transit Company is held by the employees.

Striking as these figures are, they show only a small part of

the picture. How much stock do workers hold in corporations other than the ones for which they work? This can be answered only in a general, although convincing, way. Investigations have shown that about one person out of every seven in the United States is a stockholder in some corporation. That means that about two thirds of all the families in the country have a financial interest in its business and industrial enterprises — two and a half times as great a proportion as there was twenty-five years ago. Further evidence is to be found in the records of dividends paid by corporations. Those whose yearly incomes ranged from one thousand to five thousand dollars, as shown by the federal income tax reports, received in dividends in 1917 one hundred and ninety million dollars. This was almost ten per cent of the total dividends paid. Five years later this group received in dividends almost five hundred millions, or over twenty per cent of the total paid.

The financial strength of labor may also be seen in the buying power of wages. Figures have been given showing that wages in certain industries in the United States in 1923 would purchase eighty per cent more than those paid in Great Britain and from two to four times as much as those paid in Germany, France, and Belgium.¹ More striking still is the increase in the purchasing power of wages in the United States at the present time as compared with the levels before the war. The United States Bureau of Labor Statistics publishes the index figures of union wages in sixty-six of the largest cities of the country, covering nearly nine hundred thousand union laborers.² The figures given are for the years 1907 to 1924, inclusive. During all these years only once did the weekly rates of wages fail to advance in spite of a steady decline in the hours per week. The one exception was in 1922 before industries had recovered from the depression of the two years preceding. Beginning with 91.5 as the weekly wage index for 1907, the rate had climbed to 100 in 1913. From then on the rise was rapid. In 1920 it had reached 188.5, and in 1924, 214.3. The index numbers of

¹ *Monthly Labor Review*, February, 1923.

² *Monthly Labor Review*, December, 1924.

wholesale prices, on the other hand, starting with 100 in 1913, stood at 160 in January, 1925. Prices had been much higher, to be sure, and for a time during the war and afterwards had gone up farther than wages. The point is, however, that prices came down, while wages did not come down permanently, but have constantly risen and seem destined to rise still higher.

Labor banks. — Since 1920 a labor movement, rapidly developing and of great significance, has been the growth of labor banks. The first of such banks was established in Washington, D. C., in 1920. This was soon followed by the Engineers' Coöperative Bank, established in Cleveland by the Brotherhood of Locomotive Engineers. Since that time there have been formed, or are in process of being formed, over thirty labor banks and trust companies, and as many more are being considered. These banks are scattered over the country from the Atlantic to the Pacific, in the Middle West and in the South. Most of them are controlled by the various railroad brotherhoods, but in the number are also included banks established by city central unions, garment workers, machinists, and the United Mine Workers. Men experienced in finance are chosen to manage the institutions and safeguard the hundred and fifty million dollars of capital invested in them. Every effort is made to conduct them along the same safe and conservative lines as in the case of banks otherwise controlled. As stated by Warren G. Stone, late President of the Engineers' Brotherhood and also of the Cleveland bank, the purposes of the labor bank are (1) to make the workers feel at home in a bank, (2) to help workers invest their funds wisely and to steer them clear of the fake-stock promoter, (3) to enable workers through their investments to feel themselves the partners of sound business — a method of fusing the worker and the capitalist into one, and (4) to provide for workers and their dependents a safe place of deposit for their earnings. Another labor leader made the statement that the labor bank counts on controlling the six billion dollars annually saved out of the payroll of twenty-five billion. What labor's savings might do will be better comprehended if one stops to

consider Professor Carver's statement that by investing in railroad stocks at par merely the increases in wages that have come to them in the last ten years, the railroad workers could in five years secure a controlling interest in all the principal lines of the country.

Efficiency of labor. — How can prices go down while hours of labor grow shorter and wages rise? The answer is greater efficiency of management and an increased use of machinery. High wages compel management to see that there are no lost motions. This does not mean that labor is driven harder, but that every move counts for something. The result is quantity production, the stock example of which is the Ford Company's methods of output. Others have had to follow these methods, and those industries whose managements cannot get efficiency of production gradually fall by the wayside. The use of machines, too, inevitably increases with the rise of wages. High wages result in the inventor's paradise. Labor saving devices come into use by the scores and hundreds. We have already (pp. 370 ff.) had occasion to note how greater efficiency of management and the use of machinery have enabled our industries to compete with low-priced foreign labor. We may mention here one or two further examples. In 1909 one man could produce 671 tons of pig iron in a year. In 1925 the same man could produce 1178 tons. This means that while vastly more pig iron was being produced in 1925 than in 1909, its production required actually fewer men. On all our well-managed railroads more tons of freight per man are being transported a given distance every day than was true ten years ago. Yet these men are working fewer hours per day. In 1909 the proportion of men working under forty-eight hours per week in all the great industries of the country was only 7.8 per cent. By 1919 the percentage had grown to 48.6, while the percentage of those working the long hours in industry — fifty-four to sixty hours per week — had fallen from 30.2 per cent to 13.7 per cent. Since that time one of our greatest industries, the iron and steel, has abolished the twelve-hour day and gone upon three shifts

of eight hours each. Some of the great automobile manufacturing concerns furnish us with striking figures of the increased efficiency of labor due entirely to machinery and better management. One company, which in 1912 required 4664 man-hours for each car, required in 1923, 813 man-hours for the same work. Another establishment reduced the man-hours per car from 1260 in 1912 to 228 in 1923. This explains why we can supply seventy-five per cent of all the automobiles in international trade and still pay treble the wages paid by foreign manufacturers. It would be pointless further to cite examples. Like results are to be found all along the line in our industrial world. Herbert Hoover summarizes the whole matter by saying that there has been from ten to fifteen per cent increase per capita in the efficiency of production since before the war. We could, he maintains, supply every person in the United States with everything he had before the war and lay off two million men.

Strategic position of labor. — Slowly but surely an ideal distinctively American has improved the strategic position of labor. This ideal is the all but universal desire of American parents to afford their children a life of greater opportunity and better prospects than their own lives have held. The longing for the "white collar" job is a master of driving force. The child is taught to ask what future there is in it before embarking on any occupation for a life work. All hope to fill the higher positions of management, generalship, and power. All hope to attain wealth, to be counted among the capitalist class.

To these ends the educational ideals of the founders of the Republic have rendered efficient service. First came the little red — or white — schoolhouse for everybody. The high school followed and then the colleges, the technical and business schools, and a multitude of institutions for specialized and advanced work. On earlier pages (p. 331) we noticed the rapidity of this growth. Since the war the demand for education has become almost a national obsession. Institutions of learning are hard put to it to provide for all who seek to enter. A university of four thousand students was counted large ten years ago. En-

rollments of ten thousand are now not uncommon. A few have more than this. Many colleges have had to limit their enrollment through sheer inability to take care of all the applicants for admission. Institutions that cater to those who work by giving evening courses have grown from nothing to many thousand in four or five years. What does it all mean? It is but a reflex of the universal desire, the desire to be at the top, to draw one's self out of the "common herd." Inevitably, however, the result will be the thinning of the ranks of the "common herd," and as these ranks thin the higher will go the wages of those who are content to remain in them, their strategic position strengthened by their fewer numbers. Conversely, the strategic position of those in the higher ranks will be less sound as the numbers prepared for them and seeking them grow. The pecuniary returns from such positions, therefore, and those of the less desired jobs will tend to approach the same level. It is, indeed, not at all impossible that in the near future many a common laborer's job will command wages comparable to, or even surpassing, the salaries of those who are now so anxiously fleeing the "overall" job.

The restrictions on immigration hastened the tendencies outlined above. The law as described on page 534 was made more strict in 1924. Two per cent of the foreign born of each nationality resident in the United States in 1890 was taken as the quota admissible in any one year. The change of the base year to 1890 had the effect of greatly reducing the quota from the southern European countries whence most of the glut of common labor had come. Italy, for example, lost no population in 1925 through emigration to the United States, and the experience of Italy is similar to that of all the other nations of southern Europe. No words are necessary to explain what this is to mean for the future in America. For the common laborer who is here and for him who succeeds in getting here, America will be the land of the golden fleece.

War finance: *Currency.* — We have previously (p. 447) seen how great wars are likely to result in governments' and banks'

going on a paper-money basis. What was true in the United States during the Civil War and for years afterward, was true of the governments of Europe during the Great War. Practically the whole war was fought on credit — either borrowed funds or paper money — and thus a great store of difficulties was laid up for future generations to solve. The case of the United States was more fortunate. In the first place, we were not in the war as long as the others. Secondly, our resources from the start were greater; and thirdly, we had laid up during the first two years of the war a tremendous store of gold drawn from Europe for war supplies. The statistics of exports and imports for the years from 1914 to the present tell the story. Ordinarily the values of exports and imports come near balancing through a term of years, and where they do not the deficiency is made up by other sources of revenue. For the last ten years, however, there has been no balance. Our exports have exceeded our imports by huge amounts and the other sources of income which nations like England and France once had, vanished as the war went on. The result was that, as far as their limited supply permitted, the gold of European nations came to America to pay debts and to establish credits.

IMPORTS AND EXPORTS, MERCHANDISE AND GOLD, 1914-1923

YEAR	MERCHANDISE (Millions of dollars)		GOLD (Millions of dollars)	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS
1914	2114	1789	223	57
1915	3555	1779	31	452
1916	5483	2392	156	686
1917	6234	2952	372	552
1918	6149	3031	41	662
1919	7920	3904	368	77
1920	8228	5278	322	417
1921	4485	2509	24	691
1922	3832	3113	37	275
1923	4165	3789	29	323

By 1924 the gold coin and bullion in the United States amounted to over four billion dollars, half of all the world's stock. In spite of the tremendous drains upon our resources during our participation in the war, the banks and the government were enabled to meet all obligations upon a gold basis. The dollar became the world standard of value, and the financial power of the United States assumed a magnitude never before experienced.

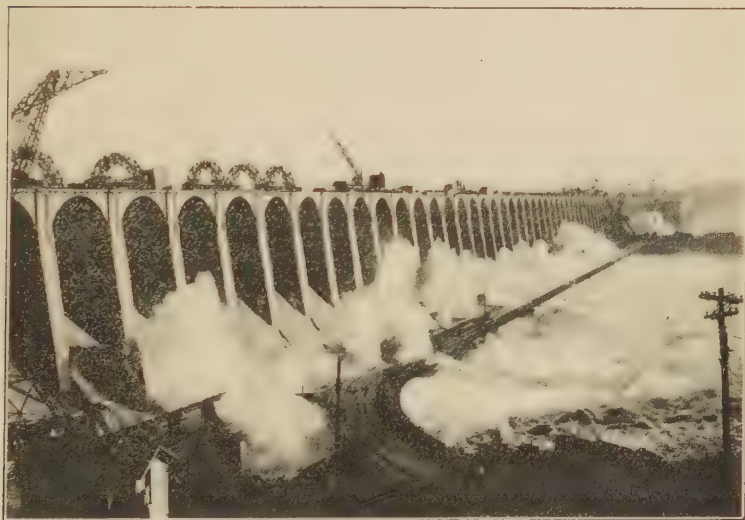
Taxation. — Before the end of the war the European nations outside of England were financing themselves on borrowed funds. Practically all had abandoned any attempt to pay an appreciable part of the costs of the war by taxation. By 1920 Europe was in debt for a total of two hundred and sixty billion dollars, not to mention the billions of paper in circulation. In the United States the reverse was true. We borrowed much, but we also taxed heavily. For this purpose the great prosperity coming to our industries through the war furnished a rich field.

The income tax was the most important source of revenue. The main features of this tax were a normal graduated tax on individual incomes ranging from four per cent on smaller incomes to over ten per cent on the larger ones; a tax designed to take away excess profits on government contracts; a surtax, in addition to the normal tax, on very large incomes; and a fixed tax of twelve and a half per cent on the incomes of corporations. The surtax was a graduated tax increasing until the total tax took more than half of any income over five hundred thousand dollars. Next to the income tax in yield were the internal revenue and tariff duties. In addition there were various methods designed to take small amounts frequently from everybody by taxes such as those on the purchase of luxuries and amusements.

TABLE OF GOVERNMENT REVENUES, 1914-1921

1914	\$734,673,167
1917	\$1,118,174,126
1918	\$4,174,010,586
1919	\$4,647,603,852
1920	\$6,704,414,438
1921	\$5,624,932,961

For five years the question of taxation and its effects has been vigorously discussed in the United States. In addition to the increase in federal taxation there has been an uninterrupted and extensive rise in state, county, and municipal expenditures. Everywhere the tax rates have risen abruptly. Where taxes do not suffice the authorities resort to borrowing, so that the debts of local communities have increased by leaps and bounds. For example, between 1918 and 1925 state and county bonds



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WILSON DAM, MUSCLE SHOALS

This great nitrate and power plant is one of Uncle Sam's war enterprises. He has been wondering for six years whether to run it himself or turn it over to private hands.

exceeding a billion and a quarter dollars have been issued for road building alone. At the present time it has been estimated that the people of the United States are paying out over ten billion dollars every year in taxes — enough to buy New York City. This sum, moreover, does not include indirect taxation and many other taxes such as that on gasoline.

One of the leading purposes of President Coolidge has been

to lessen the heavy costs of government. His economy program has, indeed, resulted in a reduction of the federal income tax rate and of expenditures. Nevertheless the government expenses are still much more than twice what they were in 1914. Two obstructions in the way of reducing taxes are demands for the expansion of governmental activities and differences of opinion as to where reduction should take place.

For years the tendency has been for governments — municipal, state, and federal — to undertake new enterprises and expand old ones, all involving more taxation. The ruthless war spending stimulated this tendency still further. It has been the common experience that once embarked upon projects requiring the expenditure of money, governments seldom retrench. Political pressure is always such that expenditures once begun usually grow. It is precisely this tendency for governments ever to increase expenditures against which President Coolidge has set his face. So far his attitude has met with a surprising public support.

The second obstacle in the way of tax reduction is a difference of opinion as to whose tax should be reduced if a reduction is made. One group holds that the rich, who, they claim, profited most from the war, should bear most of the burden of taxation. They oppose, therefore, the reduction in the surtax on the incomes of the rich, and favor reducing, or removing entirely, the taxes on the incomes of the far greater number of those who have but moderate wealth. The other group favors a great reduction in the surtax — from around forty per cent maximum to around twenty per cent — and the retention without much change of the present rates for the rest. They hold that more income would be secured from the lesser rate, because there would be less evasion of the tax. High rates, they maintain, have driven many men of wealth to take their invested funds out of industry and to put them into tax-exempt securities, such as municipal, state, and federal bonds. Thus the government loses the tax and industry loses the capital.

Taxation is a question so intricate and many-sided that we

cannot discuss it adequately here. It is difficult to make sure of a fair distribution of the burden. Too high taxes always result in a wide-spread evasion of the law. There is the danger that taxation may rise to such a point as to amount to a confiscation of capital with a consequent decline of industry, jobs, and wages. When such a point is reached a people will be but a step away from a form of state socialism. Whether such a condition would be for good or for ill will depend on the point of view of the judge. Finally, taxation is very closely connected with the cost of living. It is impossible to make the landlord or the coal dealer pay the tax on the houses which they rent and on the coal which they sell. The tax must in the long run fall on those who occupy the houses and who buy the coal. These are a few of the reasons why taxation has been so widely discussed and why it has become such a serious problem.

Loans. — In spite of the great sums secured through taxation, the government had to borrow heavily during the war. The numerous "Liberty" loans during the struggle and the "Victory" loan immediately afterward increased our national debt to over twenty-six billion dollars when it was at the peak. The momentum of borrowing and taxing did not slacken at once when peace returned, but continued for two or three years afterward. Of course, allowance must be made for the fact that a large part of our expenditures was in loans to the Allies. We have already considered briefly how our industries responded to this enormous outpouring of artificial wealth. Practically all of it, even that which we lent to the Allies, was spent here, paying for food, raw materials, manufactures, and wages. Great fortunes, high wages, high prices were the immediate result. Nevertheless it was a false prosperity, because it placed a mortgage on the wealth of the future. The loss of the world as a whole can never be paid for.

Since the war the question of the foreign debt to the United States has been as vexing as taxation. Many obstacles to its payment have been met. In the first place a strong feeling prevailed among the debtor nations that the United States

should look upon its loans to them as merely one phase in the common struggle for the salvation of the liberties of the world, and that most of it should be written off as one of our contributions to the common cause. There was also the question, granting a will to pay, of how much the debtor nations could pay. It was obvious that some of them could never pay all they owed. A further proposition discussed with favor on the other side of the Atlantic was that of a mutual cancellation of debts. For example, Great Britain would cancel its claims on France provided some one else would make similar cancellations of British debts, and so on throughout all the interlocking maze of creditors and debtors. The trouble with this fair looking proposition concerned the last "some one else." In every case this turned out to be the United States. We owed nobody but our own people. There was nobody to forgive us our debts as compensation for those which we might forgive. The whole matter, therefore, boiled down to a veiled proposition that the people of the United States take care of the balance of the debt remaining after all cancellations had been made. This the United States government positively refused to consider. After years of such discussion, however, the nations finally began to get down to business. Early in 1923 the agents of Great Britain and the United States agreed upon a plan for the payment of the former's debt through a period of sixty-two years. Since then Italy and several of the smaller powers of Europe have followed the example set by Great Britain. At the present time (1926) hope is also held out for an agreement upon plans for the payment of the debt of France. On the whole the government of the United States has not played the roll of a Shylock. The nations have all been granted long terms for the payment of their debts and the interest rates have been low, in all cases lower than those paid by the people of the United States on the sums which they borrowed to lend to Europe. The rates fixed vary with the capacity of the debtor to pay. Great Britain, for example, pays three and a half per cent while Italy pays less than one per cent.

Finally there is the domestic problem of what effects the payment of foreign debts will have on American economic interests. Nothing can be more certain than that the debts can be paid only through the production and sale of goods on a grand scale by the debtors. Where are the goods to be sold? In American markets, in competition with American-made commodities? In the markets of the world, there also competing with American-made goods? Already French industry is well on its feet, with employment close to a hundred per cent all the time. Under the working of the Dawes Plan German finance and industry, too, may settle upon a sound basis. Other events of recent date, such as the Locarno Agreement, point to a better understanding among the states of Europe and perhaps to a concerted drive by all Europe that will threaten the dominant position of America.

The problem of taxation was growing before the war, but the war made the problem vastly greater and more difficult of solution. The problem of the European debt to the United States grew entirely out of the war. Both of these questions seriously affect the prosperity and well-being of every citizen and are worthy the careful attention of everyone who has the best interests of his great country at heart.

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QUESTIONS

1. Describe the early effects of the war upon American business and industry. How were funds raised to support the war?

2. How was the United States enabled to meet its war problems? Describe the government organization for the control of industries. Describe the effects which government control had upon the conduct of business and industry. Would such control be advisable in peace times? Explain labor "turnover" and show how it affects labor and industry.

3. Did the war transfer to America actual wealth, or credit? Explain. Give facts to show how the war stimulated our industries. Give the reasons (1) for the rise of prices, (2) for the decline of prices.

4. Describe the development of (1) the steel industry, (2) the textile industry. What causes can you give for the growth of the automobile industry? Is buying automobiles on credit a benefit or a detriment to the people? Could automobiles fill the place of the railroads? Explain.

5. Describe the effects of the war on agriculture. Why did the prices of agricultural products fall before those of other commodities? Will the automobile help or hinder agriculture in the long run? What is meant by "frozen credits"? Do high prices of land help or hinder the prosperity of the farmer? Why was the agricultural depression less destructive in the South than in the Northwest?

6. Does an advance in wages necessarily mean that laborers are better off? Describe the measures taken by the government to secure the maximum of effort on the part of labor. Give what evidence you can find that laborers are more and more becoming capitalists. What advantages do industrial managements expect from the ownership by laborers of the stock of concerns for which they work? What effect will labor ownership have upon radical opinions among the laborers? Discuss the purchasing power of wages in America. How can wages go up and prices go down? Investigate the prices of a given make of automobile for the past ten years. What do laborers do with the extra time they get through shorter hours? If production could be maintained with two million fewer men and these two million are not laid off, what becomes of the extra products turned out by these men? Describe the growth of the labor bank. Will labor banks,

if successful, have any effect on the attitude of labor toward capital? Compare what is said about labor in this chapter with the statements on pages 522-525, 530, 531, 543, 544. What is meant by the "strategic" position of labor? Is learning how to earn more money the best reason for going to school and college?

7. Does war make the world richer, or poorer? Does it transfer wealth from one to another? Why did so much gold come to the United States during the war?

8. Describe the United States war taxes. How could the world borrow hundreds of billions of dollars when there are only ten billions of gold for monetary purposes in the world? Why do Europeans feel that Uncle Sam is more or less of a Shylock? Could Europe pay its debts in money? Describe the present tax situation in the United States. What measures have been taken to reduce taxation (1) by the federal government, (2) by your state, (3) by your city or town? What effects does excessive taxation have (1) on prices, (2) on industry, (3) on the honesty of men?

SUGGESTED QUESTIONS FOR DEBATE

1. Resolved that the issuance of tax-exempt securities should be forbidden by law.

2. Resolved that it would be better for the people of the United States if the government should cancel the debts owed to it by the states of Europe.



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